THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.
Entered at the Post Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXXII. AUGUST 17, 1901. No. 7

EDITED FOR 28 YEARS BY R. P. ROTHWELL.
THE SCIENTIFIC PUBLISHING CO., Publishers.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
FREDERICK HOBART, Associate Editor.

Copyright, 1901, by the Scientific Publishing Company.

SUBSCRIPTIONS ARE PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.

REMITTANCES should be made by bank drafts, post-office orders or express money orders on New York, payable to the Scientific Publishing Co.

When change of address is desired, both old and new address should be sent.

NOTICE OF DISCONTINUANCE. THE JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received by us. We find that a large majority of our subscribers prefer not to have their subscriptions interrupted and their files broken in case they fail to remit before expiration. It is therefore assumed, unless notification to discontinue is received, and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.)
London Cable Address—"PULCINETTO." " " " "

Branch Offices: Chicago, Ill., 737 Monadnock Building, Phone 73 Harrison.
Denver, Colo., Boston Building, Room 206.
Salt Lake City, Utah, Atlas Building.
San Francisco, Cal., Third Floor, Mills Building.

Vancouver, B. C., Office, Molson's Bank Bldg. Wm. M. Brewer, Manager.
London, Eng., Office, 20 Bucklersbury, 368. E. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar net.

CONTENTS.

	Page.
Editorial Notes	191
The Utilization of Blast-Furnace Gases	192
New Publications	193
Books Received	193
Correspondence	193
*The Washington Exhibit at Buffalo.....Harriet Connor Brown	195
Rail Production in the United States	196
Cyaniding Cupriferous Ores.....L. Janin, Jr.	197
The Stratigraphical Location of Named Trans-Mississippian Coals, Charles R. Keyes	198
*Some Methods of Timbering and Working Lodes in New South Wales.....J. R. Godfrey	199
The Utilization of Tin Scrap.....Joseph Richards	201
Recent Decisions Affecting the Mining Industries	201
*The Dahlonega Consolidated Gold Mining Company's Plant, Prof. Wilber Colvin	202
Mineral Collectors' and Prospectors' Column	203
Questions and Answers	203
*Patents Relating to Mining and Metallurgy	203

* ILLUSTRATED.

Personal..... 205
Obituary..... 205
Societies and Technical Schools..... 205
Industrial Notes..... 205
Trade Catalogues..... 205
Machinery and Supplies..... 206

Mining News.

United States:

Alabama..... 206
California..... 206
Colorado..... 206
Idaho..... 207
Illinois..... 208
Michigan..... 208
Minnesota..... 208
Missouri..... 208
Montana..... 208
Nevada..... 209
New Mexico..... 209
Oregon..... 209
Pennsylvania..... 209
So. Dakota..... 209
Texas..... 209
Utah..... 209
Washington..... 210
West Virginia..... 210

Foreign:
Australia..... 210
Canada..... 210
South America. 210

Markets.

Coal:
New York..... 210
Birmingham. 211
Cleveland..... 211
Pittsburg..... 211
Foreign Coal Trade..... 211

Chemicals and Minerals:
New York..... 211
Liverpool..... 211

Metals.

Iron:
Pig Iron Production..... 212
Birmingham.. 212
Buffalo..... 212
Cleveland..... 212
Philadelphia.. 212
Pittsburg..... 212
New York..... 213

Gold and Silver Prices, Statistics, Imports and Exports 213
Foreign Coins. 213
Copper..... 214
Tin..... 214
Lead..... 214
Spelter..... 214
Antimony..... 214
Nickel..... 214
Platinum..... 214
Quicksilver. 214
Minor Metals. 214

Slate:
New York. 215

Mining Stocks.

Market Reviews:
New York..... 215
Boston..... 215
Colo. Springs. 215
San Francisco 215
London..... 215
Paris..... 216
Meeting..... 216
Dividends..... 216
Assessments..... 216

Stock Quotations:
Philadelphia.. 216
Salt Lake City 216
St. Louis..... 216
Toronto..... 216
New York..... 217
San Francisco 217
Montreal..... 217
Boston..... 217
Colo. Springs. 217
London..... 218
Spokane..... 218
Mexico..... 218
Paris..... 218

Mining Co.'s:
List of..... 219

Current Prices:
Minerals, Chemicals, etc..... 220

Alphabetical Index to Advertisers.....Page 16
Classified List of Advertisers.....Pages 12, 13, 14, 15, 29

In the notice of Freiherr von Jüptner's book, "Grundzuge der Siderologie," published in the "Engineering and Mining Journal" last week, the writer of the review unintentionally overlooked the very valuable work done by Mr. Albert Sauveur, of Boston, and the results of his investigations as given in his publication, the "Metallographist." That the omission was not intentional will be understood at once by those who have seen references in our columns to Mr. Sauveur's publications, and have read the articles which he contributed to Volumes VII., VIII. and IX. of "The Mining Industry." To those who have not read these, this note will supply the omission. We know that his work is highly appreciated by authorities on the metallurgy of iron and steel, and hope that he will be able to continue it for a long time to come.

The reported discoveries of beds of nitrate of soda in Nevada are being investigated, and if they come up to the reports, may be of some importance. The deposits are near Lovelock, in Humboldt County, and a company has been formed to prospect and develop them. Chile at present furnishes the world's supply of nitrate of soda, and the use of that mineral for agricultural purposes is increasing. A large deposit in this country which could be worked and the product put upon the market at a reasonable cost, ought to be a valuable property. The extent of the beds is very imperfectly known as yet, and much work will be needed before their value can be properly estimated.

In the seven months ending July 31st this year the United States imported 818,283 bags of nitrate, and the current price is $1.90 per 100 pounds in New York. These figures will indicate the extent of the demand and the current value of the mineral.

Very little is known of the large island of Formosa, which for many years was nominally ruled by the Chinese and practically closed to foreigners. At the close of the war with China the island was transferred to Japan, and the Japanese, with their accustomed enterprise, are taking active measures to develop its resources. Formosa already contains coal mines, which are now being worked on a larger scale than ever before. Placer gold has been saved by the wild tribes of the interior who exchange the metal for goods. Copper and iron ores are said to exist in several places, while indications of petroleum are not wanting. The island is beginning to be a little better known by foreigners, and the Japanese are quite willing to admit foreign capital. There is a possible market there for much mining machinery which our makers could furnish. The mines are, as a rule, in the hands of Japanese, who are usually friendly to Americans. It is a chance which should not be neglected.

Although the movement of iron ore from Lake Superior was very active in July, and the total passing the Sault Canals exceeded that of the corresponding month last year, the movement for the season is still behind that of 1900. The total reported as delivered at Lake Erie ports up to August 1st was 8,661,431 long tons, which is 793,019 tons less than at the corresponding date last year. The shortage is not at all due to lack of demand, but to the late opening of navigation and to various delays which occurred early in the season. The July shipments made up over 600,000 tons of the decrease shown at the beginning of that month, and at the rate shipments are now going on it is quite probable that by the end of August this year's movement will be very close to that of 1900. In fact it is now limited only by the capacity of the receiving docks. Shipments from Lake Erie docks to furnaces have also been very large, and the ore is not accumulating. The rate at which stock-yards are being filled indicates preparations fo an active winter.

The steel strike has made little progress since last week, and the position is on the whole less favorable for the Amalgamated Association managers. The order of President Shaffer calling out the Amalgamated members in the employ of the United States Steel Corporation has not been obeyed as generally as was expected. While most of the men in Pittsburg and vicinity have stopped work, those at Chicago and other western points have generally decided to respect the yearly contracts which they had signed, and to continue working. If this attitude is maintained, it looks as if it would be difficult to make the strike as effective as it must be to carry the Association's point. It is further against the strikers that they have failed to touch the Carnegie mills of the United States Steel Corporation, all of them continuing steadily at work. At present, so far as trade is concerned, the strike is most felt by the tin-plate works, which are unable to make deliveries; so that there is an actual scarcity in the market. In other lines there has been so far little perceptible result.

We have heretofore expressed our opinion on the management of this movement, and still consider that the Amalgamated Association—

or its leaders—have made a mistake. It looks now as if the results would be far from beneficial to the Association, and therefore damaging to the labor cause generally.

The Mount Morgan Gold Mining Company in Queensland has been paying dividends for a long time past at the rate of 40 per cent. a year on its stock. It has recently been compelled to drop from 7 pence a share monthly to 3 pence, or from 40 to 17 per cent. yearly. The mine is in good condition, the ore maintains its usual tenor in gold, and there is no apparent falling off in development work nor in the ore opened up. There is, however, a lack of water, which has compelled the company to curtail the operations at the reduction plant. All Queensland has been afflicted with an extraordinary drought, which has now lasted nearly two years. How great this has been is shown by the records of rainfall at Mount Morgan, which have been carefully kept for a series of years. For the year 1899 the total rainfall was 51.26 inches, and for the nine years, 1891-1899, inclusive, the average per year was 41.04 inches. In that period the highest record was 62.53 inches in 1893, and the lowest 24.09 inches in 1895. In three of the nine years the total was below 30 inches, while in three it was over 50 inches. In the year 1900, however, the rainfall was the smallest on record, the total being only 13.38 inches, or less than one-third of the average. For the first half of 1901—which includes the rainy season—the total was 14.18 inches, and not much relief is now expected this year. The effect on mining operations has been depressing all over Queensland, as well as at Mount Morgan.

Some time ago we published an account of the large mill and chlorination works of the Dahlonega Consolidated Gold Mining Company at Dahlonega, in Georgia. This company bought a number of the old mining properties in Lumpkin County, its object being to work them on more systematic lines than had been followed in that region, and to apply modern milling methods to the extraction of the gold. The enterprise seemed to be an entirely reasonable one, and all who were interested in Georgia gold mines hoped for its success. So far the results have not been what were expected, and at the present time only a small part of the new mill is at work. A correspondent, on another page, gives a brief history of the operations, assigns certain reasons for the present condition of affairs, and notes possible remedies. While we give his statements, we do not agree with him, especially as to the latter part of his letter. We regret very much to see that the Southern miners are inclined to go back to their old-time reliance on the "process man," which has served them so ill in the past. The Hicks process, which is to be tried in Dahlonega, has never been used on a large scale. From the patent specifications it does not seem to differ materially from the Bullock process, which was tried in Georgia 35 years ago or more; and from others which have been tested since. It may succeed in saving the values in the Dahlonega Consolidated ores; we hope that it will, for we should like to see the work done secure tangible results.

Another plant of considerable size has been nearly completed in the same district, which seems to be working on rational lines and following well-known methods. It is, at least, so built as to work in a very economical way. We expect to describe this plant shortly, and later to give the results obtained.

THE UTILIZATION OF BLAST FURNACE GASES.

At a recent meeting of the German Association of Iron and Steel Makers, an important paper was presented by Herr Lürmann on recent developments in the utilization of blast furnace gases. From this and from the discussions, which are very fully reported in "Stahl und Eisen," we obtain many interesting particulars as to the work done in this direction in Germany and elsewhere, and its extent and importance.

As regards the progress made during the last three years Germany, with Luxemburg and Belgium, heads the list. The following figures represent the power developed with engines at work or in hand in April, 1901. Germany now employs 58 per cent. of the total power, 9,900 H. P. generated in Simplex engines supplied by the Cockerill Works at Seraing in Belgium, and affiliated firms; 10,120 H. P. in Deutz engines; 12,800 H. P. in Oechelhaüser two-cycle engines from the Deutsche Kraft Gesellschaft; 6,740 H. P. from the Nürnberger Maschinen Fabrik, and 5,105 H. P. from Körting engines, making the large total of 44,665 H. P. There are 7,600 H. P. in Belgium, 7,400 H. P. in France, and 1,800 H. P. in Italy now furnished by Simplex engines from the Seraing and associated firms. Luxemburg, one of the pioneers of this industry, has at Differdingen and Dudelingen 6,600 H. P. in Simplex engines from Seraing, and 3,200 H. P. from the Deutz-Otto firm, or a total of 9,800 H. P. In Russia there are two Seraing engines of 700 H. P. at Toula, as well as three Oechelhaüser engines, giving an aggregate of 1,500 H. P. at Kamenskoje, and a 30-H.-P. Deutz engine; total, 2,230 H. P. In England and in Spain respectively only 600 H. P. are developed from Simplex engines, and these two countries stand last on the list. The total power in Europe is 77,545 H. P. In the United States nothing has been done in this direction, which is a surprise to German engineers, who have considered this country as always ready to lead in improvement.

As to the kind of engines used, three of the chief German firms supply gas engines for blast-furnace gases, the Gas Motoren Fabrik Deutz, who make the well-known Otto engines; the Deutsche Kraft Gesellschaft, at Berlin, makers of the Oechelhaüser two-cycle engine; and Körting Brothers, at Hanover, who build four and two-cycle engines for this class of work. All these motors have been repeatedly described. The arrangement of the cylinders may be tandem or side-by-side, and usually all the pistons, up to four, or even eight, work upon the same crank shaft. The Deutz firm has not made engines of more than 300 H. P. per cylinder; a four-cylinder engine would thus give 1,200 H. P. They have constructed 18 engines, with an aggregate of 5,900 H. P., and have 13 more, developing 7,450 H. P., in hand. At Dudelingen there are two 600 H. P. Deutz engines, and one of 1,000 H. P. The Societé Cockerill builds four-cycle engines of the Simplex type, developing 600 H. P. per cylinder; four of these would thus give an aggregate of 2,400 H. P. and 36,000 H. P. are now at work, or in course of construction. The Oechelhaüser two-cycle engines give 300 H. P., and up to 1,000 H. P. per cylinder; two would thus yield 2,000 H. P. with only two cylinders Three of 1,800 H. P. are already at work, and 18, giving a total of 14,500 H. P., in course of construction. The Körting firm has made the two-cycle single-cylinder double-acting engine up to 500 H. P.; seven are now in hand, developing altogether 4,250 H. P., and amongst these there are two double-acting two-cycle engines with two cylinders, each giving 1,000 H. P.

Herr Lürmann, who has made the most careful study of this question, considers that after all the most important point—which was at first hardly considered at all—is the purification of the gases. Not only is this required for the proper working of the large gas engines, but it has also been proved that a smaller quantity of the purified gas is needed for the hot-blast stoves, thus leaving more available for power. As the operation of the blast by gas engines has proved entirely satisfactory, it is necessary to use very little gas under boilers for raising steam, and a larger proportion can be utilized in the engines. According to Herr Lürmann's calculations, based on the results of actual experience, the power which can be generated through gas engines directly is 3.6 times greater than that made available by burning the gas under boilers to raise steam; a gain, the amount of which can readily be appreciated. In German practice the consumption of gas in the gas-engine cylinders has been from 2.5 to 3.5 cubic meters per H.-P.-hour; and on this basis the available surplus per ton of pig iron made is from 12.5 to 28 H. P.

From experience obtained at Differdingen and elsewhere Herr Lürmann considers that the fan form of purifier is by far the best, and experiments have made it possible to determine a form which seems to give most satisfactory results. In all the arrangements hitherto made for cleansing blast furnace gases, one of the main difficulties has been the immense volume of gas to be purified and cooled, and consequently the large dimensions and high cost of the purifiers. Assuming that each ton of iron treated yields 4,500 cubic meters of gas, and that a furnace deals with 300 tons of pig iron per day, we get 1,350,000 cubic meters of gas per 24 hours, or 1,000 cubic meters per minute. Such a quantity can easily be managed in a fan. A liquid resembling thin whitewash flowed from the discharge pipes of the fan at Differdingen. This was the fine dust, and was run off into a clearing tank, of which there were three. Each held 60 cubic meters, and was sufficient to receive the liquid dust from gases feeding five to seven gas engines, each developing 600 H. P. After the dust has deposited in these tanks, they are flushed with water, and the dust carried away. If one fan is not sufficient to purify the gases, a second may be added.

The fan used at Differdingen, being originally intended for other purposes, was not provided with the junctions at the side necessary to connect it to the gas pipe. Fans designed for this special object are very strongly constructed, and may also be cooled with water if desired. They are made single or double, to draw in air on one or both sides. The single section fan is coupled to an electromotor on the same foundation. The fans so far used are in two sizes, with vanes of 29½ in. and of 59 in. in diameter. The sections of the admission and discharge openings are very large. In the single fans they correspond with the smaller-sized vanes to a width of pipe of 16 in.; in the larger size to one 31 in. in width. With gases at a temperature of 122° the fans can produce a pressure of 12 in. of water, the smaller-sized fan making 1,600 revolutions and the larger 800 revolutions per minute; if the temperature is higher, the pressure is less. The quantity of gas treated was 150 to 1,000 cubic meters per minute; power required to drive the fan without water, 15 to 90 brake horse-power; weight of the single

fan, from 750 kilogrammes to 5 tons. With double fans the breadth of the vanes can twice that of the single fans at the same speed and pressure; the power required and developed is about double, while the weight is only half as much again. The choice of a fan, therefore, will depend on whether it is to be connected to the gas pipe by one or by two pipes.

Whether it is advisable to use smaller fans or exhausters, with a diameter of the vanes of, say, 60 in., running at 800 revolutions per minute, treating 1,000 cubic meters of gas, and requiring 90 H. P. to drive them without water; or to use very large fans running at 138 to 170 revolutions per minute, requiring from 150 to 270 H. P., and treating 5,000 to 6,000 cubic meters of gas per minute, experience is needed to decide. In both kinds of fan, complete purification of the gases from dust and steam is obtained, if the water is admitted simultaneously, by the perfect mixing of the gas and water, and the constant whirling motion of the vanes. More power will be required if water is added than if air only passes through the fan. But if the question of cleaning the gases is once satisfactorily settled, there will be plenty of power to spare in blast furnaces, and no better utilization of it could be desired than that of purifying and cooling the gases.

So large a gain, as is shown by the statements given above, is well worth consideration, and it is somewhat surprising that no experiments have been made in this country in the direction of utilizing the waste gases. While our practice differs from the German in many points, especially as our ores are generally higher in iron than those used in Germany, so that the fuel consumed and the quantity of gas generated are less, while a much larger proportion of the gas is used in heating the blast, the existence of a considerable surplus still seems probable. It is certainly large enough to make an appreciable economy possible through its utilization; and it would seem to be of importance to our iron-makers to ascertain how great that saving might be.

NEW PUBLICATIONS.

"A Reconnaissance from Pyramid Harbor to Eagle City, Alaska." By Alfred Hulse Brooks. Being an extract from the 21st Annual Report of the United States Geological Survey. Washington; Government Printing Office. Pages, 60; with maps and illustrations.

This is an interesting summary of the observations made on an exploring expedition from Pyramid Harbor on Lynn Canal in Alaska to Eagle City, the route being by way of the headwaters of the White and Tanana rivers. The expedition started in June, 1899, reaching its destination in September, and passing through a region heretofore almost unknown. The time was not, of course, sufficient for a complete survey of the region, but many valuable observations were taken, and it was possible to determine the general geological features of the country along the line of march. These included a description of the copper deposits of the Upper White and Tanana rivers, which are apparently of considerable extent, though further exploration is needed to determine their actual value. The report is accompanied by a number of photographs and by excellent maps.

"A School Chemistry." By Dr. John Waddell. New York; the Macmillan Company. London; Macmillan & Company, Limited. Pages, 280; illustrated.

This book is based upon the author's wide experience as an instructor in chemistry, and in several ways is novel and original. The interrogatory method is largely used, the questions being for the most part simple but suggestive. They are arranged to stimulate thought, to make the student observe the important phenomena, to see their connections and to understand their full significance. The order in which the topics are taken up is new, though the reasons for the arrangement are readily understood. Water is first discussed as being a common substance, with which the student is more or less familiar. Then follow hydrogen and oxygen, the latter leading up to the discussion of air. The arrangement throughout is equally simple. Definitions are brought in as they are needed and as they arise from conditions of the facts investigated, and are therefore much more likely to be understood and remembered than when given in the ordinary way. The book seems to be a decided advance over most of the elementary treatises on chemistry, and likely to be of great service to the student.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Reports on the Administration of Rhodesia, 1898-1900." London, England; published by the British South Africa Company. Pages, 378.

"Transactions of the American Ceramic Society, 1901." Columbus, O.; published by the Society, Edward Orton, Jr., Secretary. Pages, 230.

"Western Australia. Statistical Register for 1900. Part IV. Interchange." Compiled in the Registrar General's Office. Perth, W. A.; Government Printer. Pages, 170.

"Boletin de Obras Publicas de la Republica Argentina." Buenos Aires; published for the Ministry of Public Works. No. 1, pages 96; Nos. 2 and 3, pages 144; Nos. 4, 5 and 6, pages 308. Illustrated.

"The Gold Mines of the World—Transvaal, India, West Australia, Queensland, New Zealand, British Columbia and Rhodesia." By J. H. Curle. London, England; Waterlow & Sons, Limited. Pages, 320; illustrated. Price (in New York), $5.50.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

The Holley Memorial.

Sir: An editorial in the New York "Times" of Tuesday, August 8th, 1901, entitled "The Misplaced Holley Memorial," speaks of the "beautiful memorial bust of Alexander Lyman Holley," executed by the distinguished American sculptor, J. Q. A. Ward, and now in Washington Square, as, in a modest way, "one of the most charming and attractive of the monuments of New York," and adds:

"It was erected shortly after Holley's death, by the engineers of this country and Great Britain, to perpetuate the memory of one of the best-loved representatives of that profession, whose greatest work was in connection with the development of the steel industry with which his name is inseparably identified. The memorial is in every way worthy of the rare man whose memory it was designed to perpetuate as a stimulus to the young engineers of succeeding generations to strive for the attainment of high ideals in professional life."

This statement is correct, except that the list of contributors to the Holley Memorial Fund comprised engineers of other countries besides those of which it names.

The "Times" goes on to say that the location of this memorial in Washington Square "was an original mistake of the Park Commissioners"; and that it is now both badly cared for by the city authorities and quite out of place amid incongruous surroundings. Of the original choice of this location it says:

"The Park Commissioners in office at the time its position was assigned put it in as inconspicuous a position as possible, for the reason that they had no idea who Holley was and knew only that he had had no ostensible identification with Tammany."

Finally, the "Times" advises that steps be taken to correct the mistake made in the location of the Holley Memorial, and declares that the proper place for it would be "in the grounds of Columbia University, perhaps in front of the beautiful library building, where it would in the highest degree serve the purpose of its creation, and be appreciated for what it is."

This suggestion I would heartily second; and I think that all the professional colleagues of Mr. Holley would agree with me. The Holley Memorial was formally turned over to the City of New York, and accepted by its representative, President Gallup of the Board of Park Commissioners, October 2d, 1890. That acceptance completed a contract between the city and the contributors to the Holley Memorial Fund, represented by a committee, which no longer exists, and cannot now be reconstructed. The precise way, therefore, in which the city can surrender to the keeping of other hands the trust it received, is not clear. But there must be some practicable way; and, at least, I should think the city authorities, nominally retaining the ownership of the memorial, could legally transfer it to the custody of Columbia University, upon proper conditions as to its location and preservation. I can promise the hearty co-operation of Mr. Holley's friends in so desirable a change; and I am grateful to the "Times" for suggesting it.

At the same time, the present conductors of the "Times" must pardon me if I indulge in some reminiscences at the expense of their predecessors. Individuals have memories; newspapers have only indexes, which are more trustworthy but not so easily, or so often, consulted. By neglecting to consult the index in his office, the editor of the "Times" has fallen into some historic errors.

The location in Washington Square was not the first choice of the donors of the Holley Memorial. They applied for some place in Central Park—which is large enough, one would think, to accommodate without crowding, for centuries to come, all testimonials of that kind to men of that grade. And this petition was denied, not because the Park Commissioners of the day "had no idea who Holley was," but in some measure, at least, because the New York "Times" possessed at that time the ignorance which it now attributes to them. In an editorial of April 24th, 1890, the "Times" said:

"It is satisfactory to know that the bust of the late Alexander Holley is cordially commended by the æsthetic authorities that have been consulted, as worthy of a place in the Central Park, on its merits as a work of art. It is to be wished that, besides the artistic scrutiny to which such monuments are subjected, there might be an investigation of the claims of the subject of the monument to such commemoration. The 'Advocatus Diaboli' might often have something pertinent to say on this score. Mr. Holley was an accomplished engineer, who did much, we believe, to cheapen and facilitate the process of the manufacture of steel. This technical achievement would have to be explained to the great majority of visitors to the park, and it is doubtful whether the fame that is founded upon it is general enough to justify a monument in a public park. It is, of course, a question of degree. There would be no doubt of the propriety of a public monument to an inventor of the rank of Watt, or Fulton, or Morse, whose fame is by no means confined to his own profession, and whose work is known to everybody. The time is coming, however, if it has not come already, when sites for statues in the Park will be too scarce to be assigned to effigies from which the general public will derive its first knowledge that the originals of them have existed."

The grim humor of the situation lies in the circumstance that the "Times," under its founder, Henry J. Raymond, won much credit for its brilliant and scientific treatment of important current problems, such as naval architecture; the screw vs. the paddle-wheel for ocean-

navigation; armor for ships of war; heavy ordnance, afloat and ashore; fortifications; railway-construction and practice, etc. On these topics, its editorials were written by Alexander L. Holley, whose additional contributions, over the signature "Tubal Cain," rendered famous, on both sides of the Atlantic, both the author and the journal which had appreciated his merits and secured his services. All this had been done, and Holley's volumes and essays had become leading authorities and text-books on ordnance, armor, railway and marine engineering, before he touched at all the manufacture of bessemer steel. So far as I know, he did not write much, if anything, on that subject in the "Times." The death of Henry J. Raymond in 1869 seems to have terminated his connection with that journal. At all events, his great contributions to the technical literature of steel-manufacture were made after 1871 to the "Transactions" of the American Institute of Mining Engineers and the American Society of Mechanical Engineers—of the latter of which he was the chief founder, and of the former, at various times, manager, vice-president and president—or were contained in his reports to his clients—the principal steel-manufacturers in Great Britain, France and the United States—and in his admirable lectures on the manufacture of steel at the Columbia School of Mines. When, therefore, in 1890, the "Times" alluded to Holley as "an accomplished engineer, who did much, we believe, to cheapen and facilitate the process of the manufacture of steel," it ignored all that he had done, as one of its own editors and contributors, to put America ahead of the world in the construction and operation of railways, in the use of screw-propellers, and in the manufacture of heavy ordnance and armor, and to put the "Times" itself at the head of all great daily newspapers in the sound, scientific and unerringly prophetic treatment of those steps of engineering progress, taken in the third quarter of the nineteenth century, which have revolutionized the industry, commerce and warfare of the world.

Even now, the "Times" does not seem to realize its own share in Holley's glory. Its knowledge of his achievements seems to be confined to the inscription which stands below his bust in Washington Square. Having had something to do with that legend, I beg to assure the "Times" that it was limited in length by the available space, and that, as a consequence, the most profoundly important achievement of Mr. Holley was necessarily selected for a characterization which could not possibly be made to cover all the elements of his many-sided fame. This was the more justifiable, because in other fields he had been, for the most part, a keen critic or prophet, whereas, in the manufacture of steel, he justified his own criticisms and fulfilled his own prophecies by designing and directing the works that did the thing.

Yet is was not this achievement alone, but the sum total of many achievements, which led Ericsson to characterize Alexander Lyman Holley as "the brightest ornament of American engineering"; and I trust that when the New York "Times" has occasion to mention him again, it will not forget the glory shed upon its own history by his earlier career, or the credit justly due to its illustrious founder, Henry J. Raymond, for having recognized, and introduced to a wider fame, this brilliant genius. Others, who cannot lay claim to equal equipment or achievement, are similarly indebted to Mr. Raymond. It was under his kindly encouragement that I began, as a foreign correspondent of the "Times," my own literary work; and I have never ceased to feel toward him the gratitude which I now express.

To return to the immediate subject of this article—I have waited eleven years for a chance to "get even" with the New York "Times" for its ignorant and mischievous article of 1890; but, now that the opportunity has come, I realize that the head upon which I would fain deliver a resounding blow is no longer within reach. Whatever may have been the spiteful purpose and the harmful effect of that article, the author of the latest utterance deserves my thanks, which I hope will be cordially accepted, notwithstanding my incidental satisfaction of an ancient grudge against some other person unknown, who once sat in the same chair.

R. W. Raymond.

New York, Aug. 10, 1901.

RAILROAD ACCIDENTS IN GREAT BRITAIN.—According to the British Board of Trade returns of railway accidents in 1900, accidents to trains, rolling stock, permanent way, etc., caused the death of 42 persons and injury to 1,049. Of the killed and injured, 14 passengers and 2 servants were killed and 454 passengers and 17 servants were injured in collisions between passenger trains or parts of passenger trains; 1 passenger and 1 servant were killed and 251 passengers, 51 servants and 1 other person were injured in collisions between passenger trains and goods or mineral trains, light engines, or other moving vehicles; 4 servants were killed and 56 injured in collisions between goods trains, light engines, or other moving vehicles.

RAILROADS IN PERSIA.—London "Engineering" says that although the Trans-Persian Railway has not yet been worked out in all its details, it may be taken for granted that it, as far as practicable, will be carried through the best cultivated and most fertile parts of the country. It is an advantage that it will pass through the western part of the country, which is rich in water, and that the eastern portion, with its salt steppes and deserts, can be left out of consideration. The railway will, no doubt, to a great extent follow the rivers along the foot of the mountain ridges, until from Teheran it can be continued in a southwestern direction, and reach the sea through the valley formed by the River Karun. This means a fairly straight line through Western Persia from north to south. From the point where the line will strike the Persian Gulf and to Bander Abbas it is, however, a long way; but it is contemplated to take the railway along the flat coast below the mountains to the latter place. No great difficulties as regards the soil and the actual building of the railway are anticipated; but the climate is exceedingly dry, and may give some trouble. There is not expected to be a great deal of tunnelling or bridging. Russia is doing all in her power to extend her influence in Persia, more especially in the southern part. and the country is being travelled and surveyed by Russian experts. A connection between the projected Trans-Persian Railway and the contemplated Bagdad Railway is already under consideration, Kermanshan having been examined for this purpose. The projected Trans-Persian Railway is to proceed from Rascht, on the south-western coast of the Caspian Sea; and a railway from there, via Teheran, to Bander Abbas, will have to compass a distance of some 1,200 miles. The distance from Bander Abbas to Karachi and Bombay is respectively about 700 and 1,050 miles. The contemplated railway will, when completed, tend to make Russia much more independent of the Bosphorus and the Suez Canal.

Outcrop of Marble at United States Marble Company's Quarry.

THE PAN-AMERICAN EXPOSITION AT BUFFALO.—VIII. THE WASHINGTON EXHIBIT.

Written for the Engineering and Mining Journal by Mrs. Harriet Connor Brown.

Although it is chiefly a display of possibilities, Washington's mineral exhibit at the Pan-American Exposition is deserving of high praise. Washington is as yet only a prospect State, but it has a very large mineral area. Of its 66,880 square miles, nearly one-third is known to be mineral-bearing. A spur of the Rocky Mountains crosses the northern part of the State, and meeting a range of the Cascades, forms an L-shaped ridge which reaches from the Columbia River on the south to the British line on the north and stretches east and west nearly the width of the State. In these rocky fastnesses are buried treasures of gold, silver, lead, copper, iron, zinc, coal, marble and other minerals. Some hint of its wealth is given by the splendid specimens displayed in the State exhibit.

The minerals from the western part of the State were collected by Mr. N. Rudebech of Everett, those from the eastern part by Mr. L. K. Armstrong. Mr. Rudebech is personally in charge of the exhibit, but Mr. Armstrong is represented by Mr. Carlyle Ellis of Spokane. Mr. T. H. Greenway of Spokane is also in Buffalo looking after the exhibit made by the United States Marble Company, which is probably the most striking feature of the Washington display.

The exhibit, which adjoins that of Oregon in the southwest corner of the Mines Building, is cramped for space, but systematic arrangement makes every specimen conveniently available. Blank forms giving official data regarding ores, lands, ownership, title, development and equipment of mines, together with complete and uniform labels, put information within easy reach of inquiring visitors.

General View of the Exhibit.

Mantel of Washington Marble.

The Washington Section in the Mines Building.

A large picture of George Washington, the godfather of the State, looks down on the exhibit from the main wall of the booth. Near it is a relief map of the State made by Prof. S. Shedd of the Washington Agricultural College at Pullman. A panoramic view of the mountains around the Index District, together with photographs of important camps and mills, constitute the decorative details of the exhibit.

Crude ores, which are classified by districts, form the main feature of the display. The mines that are producing and paying profits might almost be counted on one's fingers, but ores from several hundred properties are here seen, some of them mines, most of them prospects. The majority of them have, however, received considrable development and give promise of a substantial future. It is significant that almost every specimen in the exhibit has been collected within the last six months, so that the display shows the latest development throughout the State.

The most eastern districts of the State are represented by handsome malachite and azurite from Loon Lake, near Spokane. North of there is a limestone and granite belt, including the Pend d'Oreile River region, the Colville Valley, Flat Creek and Pierre Lake Districts, which constitutes the oldest producing section of the State, and is notable for its clean, high-grade galena. Chewelah, Stevens County, exhibits fine galena from the Eagle and Nevada mines. Specimens of the latter show 61 oz. of silver and 73 per cent. lead. From the Cleveland Mine of Velina, Stevens County, some specimens of ore that assays 100 oz. silver and 70 per cent. lead.

The east granite belt of the Republic District next appears rich in galena. A 5-ft. vein of high-grade ore in that same mine contributes samples of chalcopyrite taken from immense ledges of low-grade ore. The ore from the California shows a mixture of highly argentiferous galena. A 5-ft. vein of high-grade ore in that same mine contributes samples that assay 13.26 oz. gold, 25.8 oz. silver, 17.3 per cent. lead, and 4.21 per cent. copper. Ore from this mine has been shipped all winter a distance of 40 miles in wagons.

The porphyritic belt of the Republic District, which is probably the best-developed section of the State, is represented by ore from about 15 of its best known properties. It is a chalcedonic auriferous quartz with considerable silver occurring at depth. A peculiar, ribbon-streaked appearance is characteristic of much of it. Some rich pay shoots have been found, notably the famous Republic Mine. The latter is inactive now, awaiting the completion of a branch of the Great Northern Railway, which wil connect Grand Forks with Midway, in British Columbia. When that is once done, it is expected that from 600 to 900 tons of ore will be shipped from that camp daily. It will be smelted at Northport on the Canadian side, as it is too refractory for treatment by the cyanide process.

The principal properties of this district represented in the exhibit are the Quilp, Tom Thumb, Lone Pine-Surprise, Black Tail, San Poil, Morning Glory, Princess Maud, Gopher and Gold Ledge. The development of most of them awaits the completion of the railroad.

South of the Republic District is the south half of the Colville Reservation, where there are many prospects of great promise. The Manila, a large dioritic dike carrying copper and silver, is being explored by diamond drill. It sends to the exhibit some specimens of ore that run 1 oz. of silver to 1 per cent. copper. Several prospects on Silver Creek are getting argentiferous copper sulphides of high grade. The Congress on Bridge Creek claims a 43-ft. vein of pyrrhotite that carries about 10 per cent. nickel and some cobalt. There are good copper properties on the Nespelum River, and many other camps in the same region show high-grade ores of most varied character.

Westward from the Republic and the San Poil Valley districts, prospect areas are almost continuous. The Meyers Creek District, which abounds in good prospects, most of them copper, is very completely represented in the exhibit. The Palmer Mountain District, an important auriferous area, has sent some fine specimens of gold ore to the Exposition. Here is the Palmer Mountain tunnel, the largest of its kind in the State, which in the course of 4,000 ft. has cross-cut 23 well-defined veins.

The Puritan Mines on Gold Hill, a series of large porphyritic dikes in the same district, are well represented. The same may be said of the Methow and Slate Creek districts. In the latter, a free-gold belt which extends towards the northwest into the Mount Baker District, is represented by some free gold in quartz with silvanite of great beauty.

Southward down the Cascade Range a new but large copper area of remarkable promise is entered. The chief point of development here is the Index Camp, represented in the exhibit by over a ton of good chalcopyrite. The Sunset Copper Mining Company of Kittanning makes a specially good showing. Specimens are exhibited from the Copper Bell Mine which has just been sold to a New York and Boston syndicate. Its ore runs $1.60 in gold, $2.40 in silver, and from 4 to 40 per cent. copper. Other ores from the Index District include bornite from the Ethel Mines; specimens from the Wilbur Mine, which run 5 oz. gold, 16.7 oz. silver, and 67.9 per cent. copper; ore from the Index Independent, which assays 0.26 oz. gold, 13.5 oz. silver, and 47 per cent. copper; specimens from the Imperial Mine, owned by the Nonpareil Mining Company, which run 11.40 oz. gold and 4 to 20 per cent. copper; ore from the North Star Mining Company, which runs 38 oz. silver and 43 per cent. copper; arsenopyrite from the Helena assaying 1 oz. gold, 5 oz.

silver and 3 per cent. copper; and chalcopyrite from the Lost Creek Mining Company running 1 oz. gold, 3 oz. silver and 5 per cent. copper.

Gold ores are exhibited by half a dozen mining companies of Pierce County. Among them might be mentioned the Washington Co-operative Mining Syndicate, the Medina Gold Mining Company, the Montezuma Mining Company, the Mineral Creek Mining Company, the Laola Mining Company and the Lost Trail Canyon Mining Company.

Some specimens of antimony are shown from the Miller River District. They come from the Happy Thought Mine.

From the Monte Cristo District some good specimens of iron pyrites. Some ore exhibited by the Northwest Consolidated Mine runs 13 oz. of gold, 49 oz. of silver and 15 per cent. copper. This company's property is located about 2½ miles west of Monte Cristo. It is fortunate in being less than 1 mile from the Monte Cristo Railroad and in having within its confines a branch of the Sauk River, which has sufficient force and volume at all times of the year to supply the power required for operating the necessary mining machinery. The company owns 10 mining claims, which cover 200 acres. Four tunnels have been driven into the property, making a total of 500 ft. of tunnel, besides many open cuts. The company claims that the preliminary work has been sufficient to show that the property wil make a mine. Some of its ore runs as high as $300 a ton. As it is only 55 miles from the Everett Smelter, the ore can be handled without great cost.

The Silverton District of Snohomish County is well illustrated in the exhibit. Specimens from the Forty-Five Mine are interesting, as showing the characteristic minerals of the district, galena, pyrite and silver. Some of the specimens shown run 2 oz. of gold, 500 oz. of silver and 10 per cent. lead to the ton. Specimens of chalcopyrite are shown from the St. Louis Mine. Some of it runs 20 per cent. copper, with $4 in gold and $6 in silver. Ore exhibited from the Crescent Group runs 2.5 oz. gold, 40 oz. silver and 15 per cent. lead.

The Silverton Camp and the Elwell-Darrington Camp to the north represent the most western part of the copper area. The Elwell-Darrington property is on Gold Mountain, Snohomish County, 92 miles from Seattle. The Northern Pacific Railway has just completed a branch line which connects it with Seattle and the outside world. The property, which includes 7 claims, is covered with dense forests of fir and cedar, so that timber for the mines is conveniently at hand. The Elwell-Darrington Mine has been opened up by tunnels along two levels. Both tunnels are in ore, which runs from 2 to 20 per cent. copper, 4 to 43 oz. silver, and from 0.1 to 7 oz. gold. A fine stream of water runs past the mouth of the lower tunnel, supplying plenty of water power for the machinery. A reduction plant of 50 tons daily capacity is soon to be erected.

Iron is shown as hematite from Lopez Island, on the coast, and as high-grade limonite from Valley in Stevens County.

From this point also comes the most unique feature of the exhibit, a large mantel of green and gray serpentine marble, manufactured at its quarries by the United States Marble Company of Spokane. This company owns a large deposit of this handsome stone and is working it on a large scale. The deposit was discovered about 7 years ago by Mr. T. H. Greenway, while prospecting for ore. It is about 1,000 ft. long and 700 ft. high, and is on the side of a steep mountain some 50 miles north of Spokane. When discovered it was encased in a layer of hard, black, crystallized marble, only a small piece of the onyx having been exposed by volcanic action. It is claimed that this is the only deposit of green marble in the United States that is large enough in quantity and fine enough in quality to be profitably worked on an extensive scale. The marble is a silicate of magnesia, with some alumina, a small amount of soda, and a slight per cent. of water. Unlike most marble, it is not affected by muriatic acid. It is comparatively soft when it first comes out of the quarry, but it hardens quickly on being exposed to the air. Because it is easily worked it can be sold cheaper than ordinary Vermont marble. Some 80 men are employed in the quarries and mills of the United States Marble Company, where the marble is sawed, turned and polished for mantels, monuments, vases and bric-a-brac. A series of handsome slabs shows the great variety of color and texture of this marble, and the turned columns and carved caps of the mantel illustrate the workable quality of the stone.

Washington is the only State west of the Rocky Mountains that produces any considerable quantity of coal. It is, at present, a most important source of revenue, $4,893,750 of the $5,911,384 gained from mineral resources during the year 1900 having been from coal. It is all bituminous, some of it making an excellent coking coal, while other varieties are better for steam purposes. Coal is found in no lass than 21 of the 23 counties in the State.

The Wilkeson Coal and Coke Company and the Carbon Hill Coal Company, both of Pierce County, have samples of their product in the exhibit. The coal of the former company shows on analysis 65 per cent. of fixed carbon, 25 per cent. of volatile matter, and 10 per cent. of ash. The company has a coking plant of 50 ovens in constant operation. It owns and controls about 2,000 acres of coal lands. Eight veins of coal are shown with the present development, these veins containing a total of about 60 ft. of coal. Probably about 1,000,000 tons of coal have beeen taken from this field up to the present time.

The property of the Carbon Hill Coal Company is on a branch of the Northern Pacific Railway, 5 miles from Croker Junction. Four veins are being worked, the four having an aggregate thickness of about 25 ft., from which about 4,000,000 tons of coal have been taken. The coal shows on analysis 53.25 per cent. of fixed carbon, 29.75 of volatile matter, 14.8 of ash, and 1.87 per cent. of sulphur.

The Blue Canon Coal Company of Whatcom County is represented in the exhibit. One 7-ft. vein is being worked. It is estimated that with certain new developments the mine will produce 20,000 tons of coal during the coming year.

Coke is displayed from the Skagit Coal and Coke Company of Cokesdale. The mine is owned by the Great Northern Railway, which runs a branch down to the mine. The measures on the upper level are practically exhausted. A shaft has been sunk 530 ft., and they are now drifting over to the vein on a lower level.

The Pacific Coast Company of Seattle exhibits specimens of its coal from No. 7 Franklin Mine. This company is at present engaged in developing work on a large scale.

Limestone is exhibited from the Roche Harbor quarries in San Juan County. The limestones of this region are said to be the purest on the continent. Analysis shows that the specimens on exhibit contain 98.32 per cent. of calcium carbonate, 0.44 per cent silica, 1.13 per cent. iron and alumina, and 0.11 per cent. of phosphorus.

Cement clay is also exhibited by the same company. Dishes are shown made from an excellent quality of pottery clay found near Burnett, Pierce County. The brick clays of Washington range from white to dark red, and include a beautiful mottled variety. Fire-clay of the best quality for manufacturing porcelain and chinaware is found in the coal regions.

With all these abundant sources of wealth it would look as though Washington were destined in time to be one of the most productive mineral States in the Union.

RAIL PRODUCTION IN THE UNITED STATES.

The American Iron and Steel Association has completed its collection of the statistics of the production of all kinds of rails in the United States in 1900. In March last the production of bessemer steel rails by the producers of bessemer steel ingots in 1900 was given as amounting to 2,361,921 gross tons. To this total must now be added 21,733 tons of bessemer rails made in the same year from purchased blooms and rerolled and renewed bessemer rails, making a grand total for the year of 2,383,654 tons of bessemer steel rails. In the same year we also made the largest quantity of open-hearth rails in recent years, 1,333 tons, and the smallest quantity of iron rails ever recorded, 695 tons, which, added to the bessemer steel rails above given, make the total production of rails in 1900 amount to 2,385,682 tons, the largest production ever attained in one year.

The following table gives the total production of rails in the United States in 1900 according to the weight of the rails per yard. Included in the total production are 101,312 tons which have been definitely reported as street rails. The figures are in long tons:

Kinds.	Under 45 lbs.	45 lbs. and less than 85.	85 lbs. and over.	Total.
Bessemer	155,950	1,625,646	602,058	2,383,654
Open hearth	886	447	.....	1,333
Iron	695	.....	.....	695
Total	157,531	1,626,093	602,058	2,385,682

The total production of all kinds of rails in 1899 was 2,272,700 tons, of which 133,836 tons weighed less than 45 lbs. to the yard, 1,599,340 tons weighed 45 lbs. and less than 85 lbs., and 579,524 tons weighed 85 lbs. and over. The street rails made in 1899 and reported amounted to 154,246 tons.

THE BEDADANOLE COAL-FIELD, INDIA.—"Indian Engineering" says that this mineral area is in the Godaveri District of the Madras Presidency, on the confines of the Nizam's territory. The deposits are said to be an extension of those in the Singareni Field southward. This coal area was assigned to the late East Coast State Railway with a view to further prospecting and possibility of its working.

MINERALS IN PALESTINE.—A report recently published in Germany refers to mineral deposits which might be utilized in Palestine. This report says: "The newly discovered mineral deposits lie on both sides of the Jordan and the Dead Sea. The salt deposits of the Dead Sea could be developed into an industry. The waters hold magnesium chlorides and bromides and some potassium salts. Besides, there are the bituminous springs of Nebi Musa, which contain from 30 to 40 per cent. asphalt. The most important of all the deposits is phosphate. The fields of phosphate to the east and west of the Jordan need only better means of traffic and communication in order to insure their development."

COAL IN RUSSIA.—In a recent semi-official report the output of Russian coal for 1900 is given approximately as follows: South Russian or Donetz Basin, 10,478,650 tons; Polish or Dombrovski Basin, 3,949,645; Oural, 354,662; central and other districts, 128,968; total, 14,911,925 tons.

Except in the south, and partly in the west, where from want of forests, coal is used for household purposes, in Russia generally it is not so much an article of general as of industrial necessity. Russia burns 90 per cent. wood fuel, 7.3 per cent. coal, 2.5 per cent. petroleum, and 0.2 per cent. peat. The further development of the coal industry is hampered by transport difficulties and insufficiency of rolling stock, even where communications are comparatively plentiful.

VICTORIUM.—The "Journal" of the Franklin Institute in Philadelphia says that Sir William Crookes has recently given an account to the Royal Society of his discovery of the new element which he calls victorium. It has a pale brown color and dissolves easily in acids. Its oxide is less basic than that of yttrium, but more so than the greater part of the earths of the terbium group. The chemical properties of victorium differ in many respects from those of yttrium, but generally speaking, it may be said to occupy an intermediate position between this element and terbium. It is admitted that the oxide of victorium has the formula Ve_2O_3, its atomic weight is not far from 117. The photograph of the spectrum given by the oxide shows certain definite lines which have not been observed with any other body. The spectrum is obtained by the incandescence of the body in a vacuum tube; the light given off has been analyzed by a spectroscope of great precision and the exposure upon a photographic plate shows a series of interesting rays in the ultra-violet region. An apparatus has been constructed which will measure to 0.00001 in., in order to examine this negative.

CYANIDING CUPRIFEROUS ORES.

Written for the Engineering and Mining Journal by L. Janin, Jr.

The ores of the Lydenburg (Transvaal) District when oxidized are treated easily, but the pyritic ores present some interesting difficulties. The ores are composed of quartz, oxides of iron (when the ore is oxidized), some dolomite from the enclosing rock and contain small quantities of manganese, bismuth, copper and silver. The bismuth presents no difficulties; the manganese dissolves only when an insufficient quantity of lime is used, and not over 10 per cent. of the silver is recovered. The average contents of copper is in the neighborhood of 0.4 per cent. but is found as carbonates, oxides, iron pyrites and occasionally sulphides of copper and copper in the metallic state. The metallic copper is almost entirely caught on the amalgamator plates, and of the rest only a small proportion is dissolved in the form of cupro-cyanide of potassium (3 K Cy Cu Cy.).

Experiments made in dissolving the copper out of the ore (acids could not be used on account of the dolomite) previous to cyanide treatment were unsuccessful and a portion only of the copper was dissolved, leaving a fresh quantity soluble in cyanide of potassium.

The only method which has given satisfactory results depends on the property of cupro-cyanide of potassium to dissolve a small quantity of copper in the form of sub-cyanide, which is then precipitated by the Siemens-Halske process. A solution obtained in the ordinary course of practice containing cupro-cyanide, but no free cyanide, is employed. After charging with copper the excess is precipitated and the solution is then ready for a fresh charge. The cupro-cyanide dissolves gold very slowly in oxygenated solutions, but on the other hand, as in the process of Professor de Wilde, the gold is precipitated in the presence of cupro-cyanide and a reducing agent.

Experience has proven that the tanks should not exceed 3 ft. in depth, as with greater depth the free cyanide in solution is exhausted. A plant arranged for double treatment is most advantageous.

While the tailings and slimes do not show acidity or soluble salts, yet they absorb a large quantity of alkali, and it is necessary to employ in the neighborhood of 5 lbs. of lime for the sands and 15 lbs. for the slimes. It seems that the lime is employed in precipitating unstable combinations of iron. At first an alkaline wash is employed, followed by a wash with a solution containing about 0.07 per cent. free cyanide. In passing through the free cyanide in this solution is decomposed and the cupro-cyanide of potassium dissolves a new quantity with formation of sub-cyanides. These sub-cyanides are converted by free cyanide into the normal cupro-cyanides. After the loss has been determined the strength of the following solution is roughly estimated; this will be from 0.1 to 0.2 per cent. free cyanide. In order to avoid loss of cyanide as much as possible, drawing off the solution is suspended when its strength reaches the normal point—about 0.05 per cent. This strength is naturally determined by practice. It depends upon the length of treatment and the conditions of the plant.

When the gold is dissolved a dilute solution is employed, as in ordinary treatment, to remove every trace of soluble gold salts. If the ores treated be of uniform composition the copper contents of the solutions attain a point of equilibrium when the quantity dissolved is found to equal that lost and precipitated.

It has been observed that ferro-cyanide of potassium is never found where copper is in solution, as it is precipitated without doubt as cupro-cyanide of iron in the tanks.

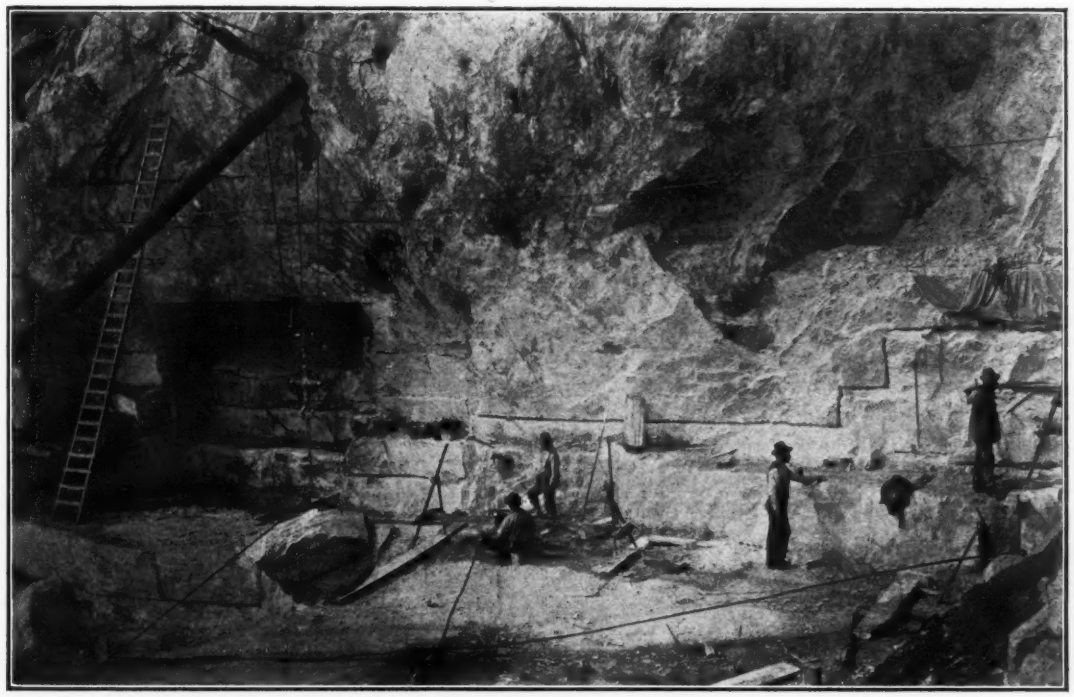
In the precipitation of gold on zinc shavings it does not seem that a small quantity of copper in solution is troublesome, but the precipitation is facilitated. When, however, it is over 0.01 to 0.02 per cent., it gives rise to gross difficulties, enveloping the zinc and preventing the formation of gold-zinc slimes. For over six years a system of intermittantly washing the boxes with an excess of cyanide was followed by maintaining the normal strength of the solution by the addition of cyanide in a thin steam at the head of the box, cutting the zinc so as to obtain the maximum surface, and frequently changing the charge of the compartments. When MacArthur introduced his patent for the immersion of zinc in a solution of lead acetate it was immediately adopted with advantageous results. The precipitation of copper as well as gold was increased by the action of the lead.

The strength at which the solution should be maintained to assure regular precipitation is regulated to a certain point by the percentage of copper in solution; 0.03 to 0.12 per cent. is employed, according to circumstances. Precipitated gold has a endency to re-dissolve in these solutions from cupriferous ores unless the boxes are regularly soaked with a solution of cyanide, as mentioned before, as for example a solution containing 4 dwts. and 0.05 per cent. free cyanide has left the box containing 30 dwts. where a cyanide was not employed. It was noticed also that a weak solution precipitated more copper than a strong one.

The Siemens-Halske process presents many sensible advantages over the zinc in the case of cupriferous solutions. It is not necessary to add cyanide at the head of the boxes; on the other hand there is a regeneratoin of cyanide utilizable in folowing operations through the precipitation of the copper.

Gold and copper are precipitated as a hard coating adherent to the cathode which does not show any tendency to scale or become spongy, which would be unfavorable to good precipitation. A hard crust, consisting mainly of cupro-cyanide of iron, forms upon the iron anodes and covers the greater portion of the sheets. This is a serious inconvenience when the sheets have been employed some time, as an excess of current passes to certain sections of the sheet, and the excessive deposits of copper upon the sheets approach contact and cause short circuiting.

The best method is to have cloth sacks hung from a frame on each side of the anode with the opening at the top. In this case the bases are made larger, proportionately, to the supplemenary space occupied by the anode. Short circuiting is also partly obviated by using a current as weak as possible consistent with precipitation, and moving the lead strips daily. It is also preferable that connection be made by a fine iron wire between the sheet of iron riveted to the anode and the copper ribbon, in order that it may burn out upon an elevation of amperage, permitting a short circuit to be discovered. The temperature of the solution seems to affect precipitation to a considerable degree; the colder the weather, the less effective the precipitation. It is preferable in winter to heat the solution to a temperature of 10° C. at least.



QUARRYING MARBLE, UNITED STATES MARBLE COMPANY.

BLAST FURNACES IN BELGIUM.—Out of 41 existing blast furnaces in Belgium only 20 are at present in operation, as compared with 34 twelve months ago. Three of the active furnaces are running on foundry iron, 4 on forge iron and 13 on steel pig.

BAUXITE IN NEW SOUTH WALES.—The occurrence of bauxite in New South Wales was not known until 1899, when it was recognized by the geological surveyor at Wingello, in the county of Camden, where he found it occupying considerable areas. Almost simultaneously it was detected in extensive deposits in the Inverell and Emmaville districts. The location of the bauxite deposits is as follows: (1) Wingello, 105 miles from Sydney, on the railway, near Uringelly Creek; (2) Inverell, 468 miles north of Sydney (nearest railroad 40 miles); (3) Emmaville, 463 miles north of Sydney (nearest railroad 18 miles).

THE STRATIGRAPHICAL LOCATION OF NAMED TRANS-MISSISSIPPIAN COALS.

Written for the Engineering and Mining Journal by Charles R. Keyes.

In a former issue* of this "Journal" the geological positions of the Trans-Mississippian coals were discussed at some length in relation to the supplies afforded; and the percentages of the total coal production that each formation furnished in the region were noted. It was shown that more than nine-tenths of the entire coal output of this field were obtained from a single formation—the Cherokee Division. It was farther indicated that the future production of the different geological terranes would not probably modify these calculated ratios to any appreciable extent. There is another phase of the subject that is also of special interest; and this is briefly considered in the present connection.

Many of the coals in every field receive special designations by which they are known to the trade. Some of these titles become widely used; and upon them the reputation of the respective coals frequently stand. These names are not always geological titles; and coal samples bearing the same name may often come from very different mines and even from very different coal horizons. For purposes of chemical analysis or physical tests the samples of coal are often taken from the railroad cars, frequently after the latter have reached their destination. Little attention is paid to the exact seam from which the material for examination was obtained; and the name that it may go by, may or may not be a clue to the original locality of the coal.

In the case of the special comparative tests and analyses such as are usually undertaken by the geological surveys, great care is taken to obtain the samples, that are to be examined, direct from the mines or outcrops themselves, and at the same time to determine accurately the particular seam or coal horizon. Most of the results are used over and over again by all classes of industrial workers. As, however, the scientists give local geographic names to the geological formations and particular strata, the names do not always suggest the geological horizon. The same is true when the local trade name of a coal is adopted by the geologist.

In the American coal-fields, east of the Mississippi River, some coals noted for particular qualities are widely known by special designations. The names have a peculiar value in purely scientific work because the seams are of great areal extent. The geological positions of such coals are inferred as soon as the names are mentioned.

In the Trans-Mississippian, or Western Interior, coal-field the case is very different. Many names are known to the trade; but on account of the rather limited lateral extent of most of these coal seams their geological horizons cannot often be inferred. Reference to the geological literature of a region does not always help matters much, because a large proportion of the titles are not recognized as geological names that have been defined.

There are, however, a great many of these names of coals which have come to have a definite meaning. Those which have now become firmly established are referred below to their special formations according to the general or schematic scale of formations represented in the Mississippi Valley. For greater convenience, and in order that the various horizons may be more readily appreciated, the standard geological section of the whole Carboniferous system as developed in this region is here given:

Schematic Geological Section of the Carboniferous of the Mississippi Valley.

Series.	Terranes.	Thickness, feet.
Carboniferous System.		
Cimarron	Kiger shales.	250
	Salt Fork shales.	500
Oklahoman	Wellington shales.	200
	Marion limestones.	150
	Chase limestones.	200
	Neosho shales.	150
Missourian	Cottonwood limestones.	10
	Atchison shales.	500
	Forbes limestones.	30
	Platte shales.	150
	Plattsmouth limestones.	30
	Lawrence shales.	300
	Stanton limestones.	35
	Parkville shales.	100
	Iola limestones.	50
	Thayer shales.	75
	Bethany limestones.	100
Des Moines	Marais des Cygnes shales.	250
	Henrietta limestones.	75
	Cherokee shales.	300
Arkansan	Sebastian shales.	1,800
	Spadra shales.	500
	Norristown sandstones.	400
	Boonville shales.	2,500
	Appleton shales.	1,300
	Danville shales.	2,000
	Millstone grit.	500
Mississippian	Kaskaskia limestones.	200
	St. Louis limestones.	300
	Augusta limestones.	250
	Chouteau limestones.	100

It will be noticed that the large majority of the named coals belong to the Cherokee Division of the Des Moines Series. This feature is not wholly unexpected when it is taken into consideration that, as shown elsewhere, nearly the entire coal production is obtained from the same formation. In a subsequent article, some of the peculiarities of the different coal horizons, as indicated by the chemical analyses, will be pointed out. In another place, also, will be discussed the chemical individualities of many of the named coals.

The named coals of the coal measures of the Western Interior field may be considered as belonging to the several terranes as follows:

Arkansas series:
- Coal Hill coal, Johnson County, Ark.,
- Ouita coal, Pope County, Ark.,
- Phillpott coal, Johnson County, Ark.,
- Shinn coal, Pope County, Ark.,
- Spadra coal, Johnson County, Ark.

Cherokee terrane:
- Ardmore coal, Macon County, Mo.,
- Bevier coal, Macon County, Mo.,
- Carbon coal, Macon County, Mo.,
- Cherokee coal, Southeastern Kansas,
- Columbus coal, Southeastern Kansas,
- Edwards coal, Lafayette County, Mo.,
- Eureka coal, Macon County, Mo.,
- Farmington coal, Van Buren County, Iowa,
- Fayette coal, Howard County, Mo.,
- Fort Scott Red coal, Southeastern Kansas,
- Glasgow coal, Howard County, Mo.,
- Grady coal, Eastern Indian Territory,
- Honey Creek coal, Henry County, Mo.,
- Huntington coal, Western Arkansas,
- Hydraulic Limestone coal, Henry County, Mo.,
- Jordan coal, Henry County, Mo.,
- Leavenworth coal, Leavenworth County, Kansas,
- Lebec coal, Cedar County, Mo.,
- Lewis coal, Henry County, Mo.,
- Lick Creek coal, Ralls County, Mo.,
- Macon City coal, Macon County, Mo.,
- Mammoth coal, Callaway County, Mo.,
- Mammoth coal, Henry County, Mo.,
- Marais des Cygnes coal, Vernon County, Mo.,
- Mastodon coal, Callaway County, Mo.,
- Mormon Ridge coal, Boone County, Iowa,
- Muchakinock coal, Mahaska County, Iowa,
- Mulky coal, Lafayette County, Mo.,
- Norman coal, Eastern Indian Territory,
- Osage coal, Osage River, Mo.,
- Oswego coal, Southeastern Kansas,
- Pittsburg coal, Southeastern Kansas,
- Rich Hill coal, Bates County, Mo.,
- Summit coal, Macon County, Mo.,
- Tebo coal, Henry County, Mo.,
- Warrensburg coal, Johnson County, Mo.,
- Wapello coal, Southeastern Iowa,
- Waverly coal, Lafayette County, Mo.,
- What Cheer coal, Keokuk County, Iowa,
- Weir City-Pittsburg coal, Southeastern Kansas.

Henrietta terrane:
- Beech coal, Howard County, Mo.,
- Chariton coal, Schuyler County, Mo.,
- Cross coal, Chariton County, Mo.,
- Fort Scott coal, Southeastern Kansas,
- Hilltown coal, Schuyler County, Mo.,
- Lexington coal, Lafayette County, Mo.,
- McAlester coal, Eastern Indian Territory,
- Mendota coal, Putnam County, Mo.,
- Mystic coal, Appanoose County, Iowa,
- Secor coal, Eastern Indian Territory,
- Spring Creek coal, Sullivan County, Mo.

Marais des Cygnes terrane:
- Boicourt coal, Linn County, Kansas,
- Holden coal, Johnson County, Mo.,
- Lacona coal, Central Iowa,
- LaCygne coal, Linn County, Kansas,
- Lonsdale coal, Guthrie County, Iowa,
- Marshall coal, Guthrie County, Iowa,
- Marais des Cygnes coal, Eastern Kansas,
- Mayberry coal, Eastern Indian Territory,
- Mulberry coal, Bates County, Mo.,
- Panora coal, Dallas County, Iowa,
- Pleasanton coal, Linn County, Kansas,
- Wheeler coal, Warren County, Iowa.

Thayer terrane:
- Brooks coal, Wilson County, Kansas,
- Independence coal, Montgomery County, Kansas,
- Neodesha coal, Wilson County, Kansas,
- Thayer coal, Neosho County, Kansas.

Lawrence terrane:
- Douglass County coal, East-Central Kansas,
- Franklin County coal, East-Central Kansas.

Platte terrane:
- Osage coal, Osage County, Kansas,
- Osage City coal, Osage County, Kansas,
- Topeka coal, Shawnee County, Kansas.

Atchison terrane:
- Nodaway coal, Southeastern Iowa,
- Rulo coal, Southeastern Nebraska,
- Silver Lake coal, Shawnee County, Kansas.

It may be stated in this connection that the references to the literature where the various coals here mentioned are described may be found in a recently issued paper in the "Proceedings" of the Iowa Academy of Sciences*. There are given in each case not only the name, but the author first using the title, the reference to the literature, the date, the location and stratigraphical position, besides annotations.

The locations mentioned in the present article are those which form the original localities. In most cases many other localities are known.

ACCIDENTS IN INDIAN MICA MINES.—Accidents have been reported frequently in the mica mines around Nellore, India, that a special inspector has been sent to examine the mines and recommend such changes in working methods as may seem necessary.

*Volume LXIX., pages 528-529, May 5th, 1900.

*"Proceedings" Iowa Academy of Sciences, Volume VIII., pages 128-137, Des Moines, 1901.

SOME METHODS OF TIMBERING AND WORKING WIDE LODES IN NEW SOUTH WALES.*

By J. R. Godfrey.

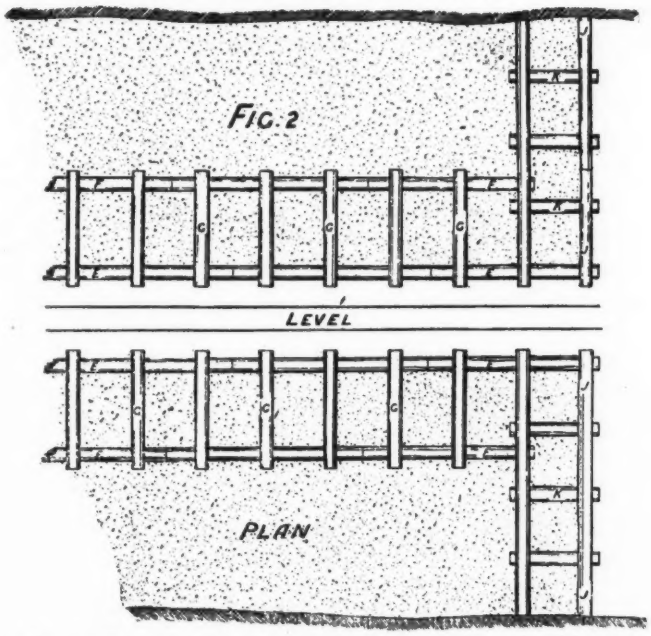
In considering any mine, two factors must be thought of.

1. The best method of timbering and working the mine, and breaking the ore, to the greatest economic advantage consistent with safety.
2. The treatment to be adopted for extracting the metal from its ore.

It is only proposed in this essay to study a few typical cases of actual mining where the local conditions modify the methods employed, the treatment of the ore, though highly interesting, not being considered. Four examples are taken:

1. The Great Cobar Copper Mine, Cobar.
2. The Cobar Gold Mines, Limited, Fort Bourke, Cobar.
3. The Prince of Wales Mine, Gundagai.
4. The Sybil Mine, Gundagai.

1. The Great Cobar Copper Mine.—This valuable mine has been worked for many years, but in its early days the workings were confined to the extraction of the carbonates and oxides of copper, and the rich decomposing zone lying between the oxidized and sulphide ores, all of which were smelted in reverberatory furnaces; the attempt to profitably smelt the sulphides in these furnaces was a failure, and resulted in the closing of the mine. The present syndicate when they obtained possession, had to rely almost entirely upon the sulphide ores for their supply, but by the erection of water-jacket blast furnaces, and economic mining at a time when copper was at a low price, they solved the problem with a success which is now ancient history.

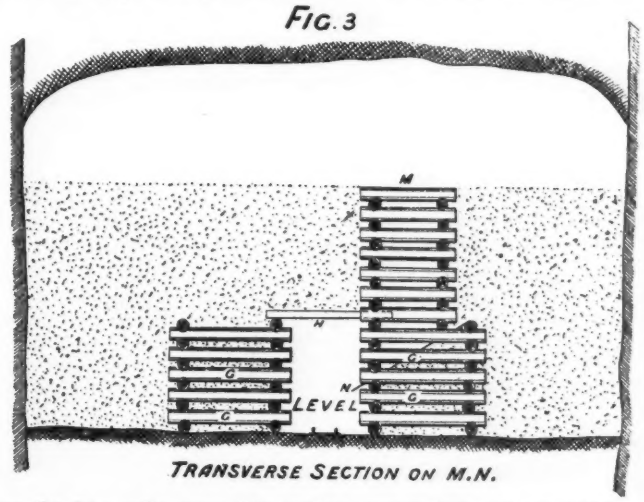


As in nearly all copper mines, the deposits of ore in this mine occur in bunches, with blanks of country between; some of these bunches are from 50 to 70 ft. wide, 200 to 300 ft. long, and extend downward to depths at present undetermined. The country rock is slate, and stands well; the ore itself is very strong, and practically requires no support; but as, for economy's sake, it is necessary to keep the men up to their work, without putting them up on stages, and as the owners have wisely adopted overhand stoping, instead of the pernicious system of under hand stoping, so dear to the hearts of some managers even to this day, it became necessary to timber and fill the ground.

The only straight timber of any size in the locality is the Lachlan pine, which on account of its brittleness, is unsuited to withstand heavy pressure if put in as sets; but which if built up as stacks, "pig styes," or bulkheads and filled with mullock, is capable of withstanding enormous pressure; consequently this system of timbering was considered the cheapest and best, and was adopted. Machine drills are substituted almost entirely for hand labor; the ore being particularly suitable for them, is shot down in large blocks, and then broken up by hand-drilling and "popping." Where the shafts pass through the lode, a pillar of ore is left on either side, and no stopes are allowed to come nearer than from 8 to 10 ft. of the shaft, thus leaving it always secure.

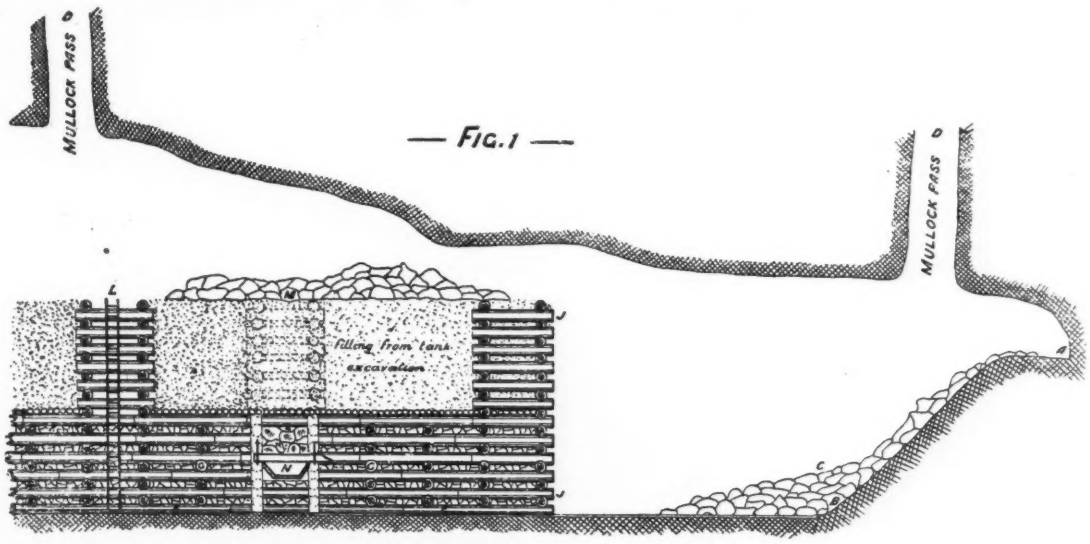
Suppose now, that a level started in ore from the shaft has been advanced 8 or 10 ft., or that a level has passed through a bank and has entered a bunch of ore, then as soon as this has been done, a face is opened right across the ore body from wall to wall, and stoping is then commenced by working away the ground forward and upward, until a height of from 15 to 20 ft. has been attained from the level, when for the time being the stope goes no higher, but a leading cut is carried along at this height, solid ore being left underfoot, but inclining down to the level, so that the broken ore can roll down and be trucked away; the inclined bench of ore being worked away behind as the leading cut advances, but always maintaining its relative inclination and distance.

Fig. 1 gives the elevation of a stope in full work: A is the leading cut, AB the bench of ore left underfoot and inclining away to the level, and which is worked away as the cut A advances, so that the whole face of the stope is worked forward on an incline; the broken ore, C,



from the face rolls down this incline, accumulates at the bottom, and is then trucked away. By working in this way the men are always near their work, and are standing on solid ground, instead of on stages, and have an easy means of walking up or down the incline. After the leading stope has been carried forward some distance, and the broken ore removed, an excavation is left from 15 to 20 ft. high and the full width of the lode, hence to enable the stope to be continued upward, it is necessary to fill the depleted ground, and to form a level; provision is always made beforehand for filling, by sinking winzes (Fig. 1, D) from the levels above.

To form the level, long stringers of Lachlan pine (Fig. 2, EE) are laid down longitudinally on either side of the truck-road, and 6 ft. apart; 7 ft. behind these another parallel row is laid down (Fig. 2, FF), and



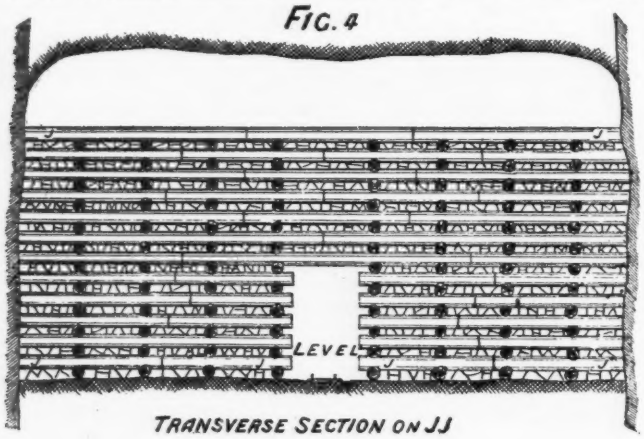
ELEVATION

MINE TIMBERING IN NEW SOUTH WALES.

*Abstract of paper read before the Australasian Institute of Mining Engineers.

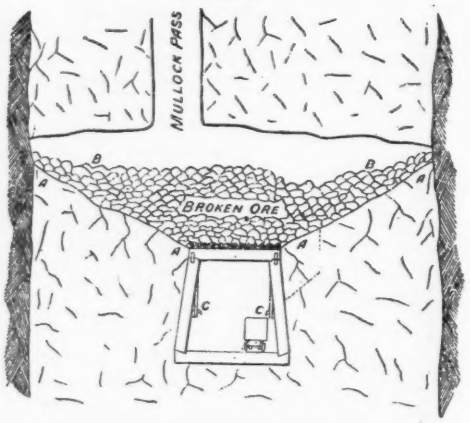
cross-logs, GG, are laid across from E to F, every 4 ft. apart; where these stringers and spreaders or cross-logs rest on one another, a scarf is cut out in each, so that they cannot shift; and every log is scarfed out on its under and upper surface. The cross-logs or spreaders overlap the stringers about 6 in., leaving a level 5 ft. wide. Stringers and spreaders are then built up alternately, until they are 8 or 10 ft. high; the level is formed by placing smaller round logs (Fig. 3, H) across the top to

FIG. 4



TRANSVERSE SECTION ON JJ

FIG. 5

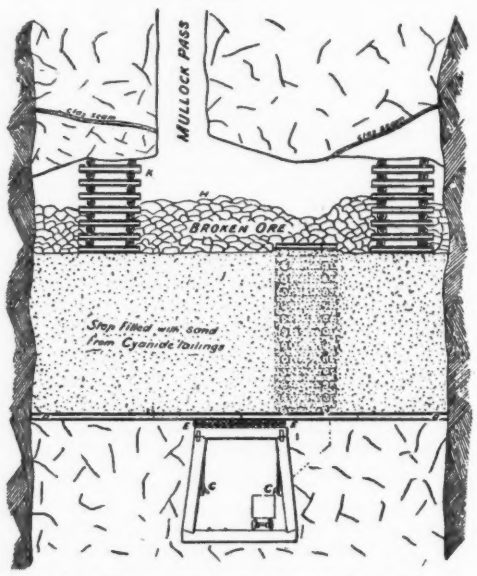


cover over the level, and the ground is then ready for filling—but as it is inadvisable to bring the level too near the face of the leading stope (lest the shooting should break the timber) only the first section of the stope is filled at first; to do this and to keep the filling in its place. a bulkhead (Figs. 1 and 2, JK) is built right across the stope from wall to wall, in exactly the same way as the level timber, but instead of being only 8 or 10 ft. high, it is carried up to the height to which the stope is to be filled, usually about 4 ft. from the back.

As soon as the bulkhead is started, filling is commenced, and the whole timbered part of the stope, together with that between the timber and the walls from its commencement to the builkhead is gradually filled, until the filling is within 5 ft. of the back of the stope. The traveling passes (Fig. 1, L) are logged up immediately above the level, while the ore passes (Figs. 1 and 3, M) are built alternately on either side, about 25 ft. apart, and ore chutes, N, put in. When the stope has been filled sufficiently to allow the men to recommence stoping, the ore is worked up another 8 to 12 ft., the men standing on the broken ore, which is then spalled, put down the passes and trucked away, the bulkhead is built up again, and the stope again filled, and so it goes on until the ore is beaten out to the level above.

But meantime the face of the stope, A, has been advancing, and another section must be filled, so a new bulkhead is started further along; the logs, J, in front of the former bulkhead are drawn and used again, but the spreaders, K, are left in, as they would be too troublesome to remove; the level timber is extended to this new bulkhead, the ground filled, passes logged up, and another cut taken off this section of the stope: in this way stoping is carried on until the end of the ore body

FIG. 6

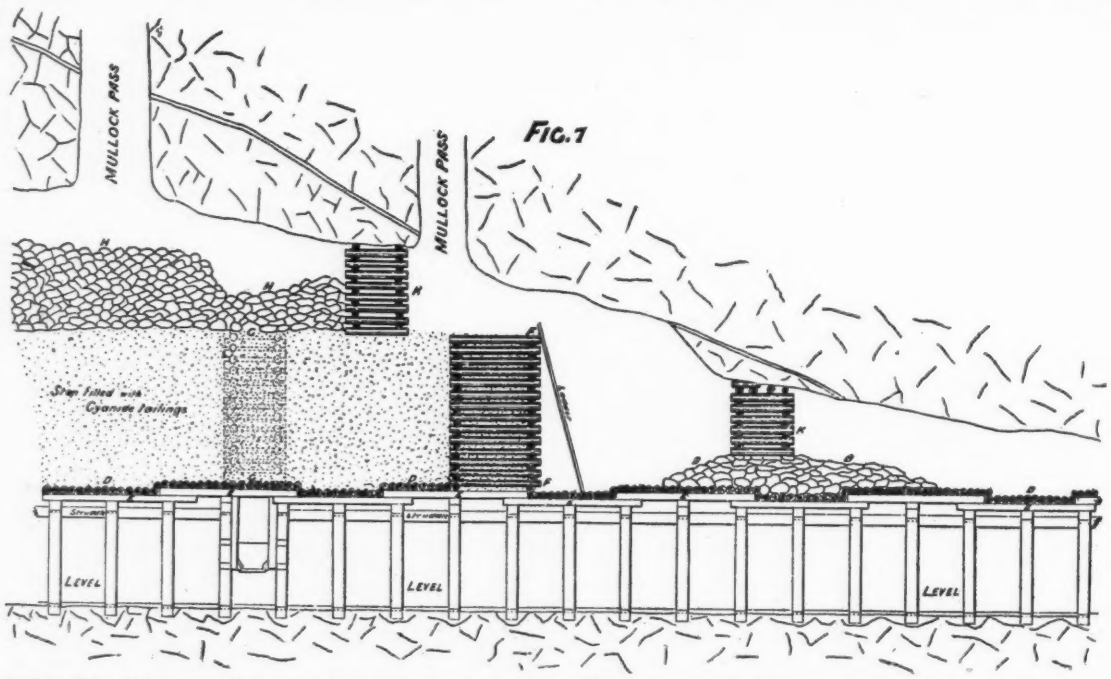


is reached, when the level is continued to this point and the whole stope subsequently filled uniformly without bulkheads. Before the stope is filled, winzes are sunk down to the next level, so that provision is always made beforehand for filling.

The stringers forming the level and bulkhead timber (Figs. 1, 2, 3 and 4, E and J) are from 9 to 15 ft. long, and where they are joined end to end, the joints are carefully broken, so that no joint is above that in the logs of the row beneath, otherwise it would leave a weakness in the timber. The space between these stringers is filled by using chocks of waste timber, which prevents the filling from working out into the level, strengthens the whole timber, and keeps the miners from using the filling for tamping, and thus preventing cavities from being started in the filling, which would result in endless annoyance in keeping the level clear of earth.

The filling used is red clay, obtained from the tanks which are being sunk all over the company's property; owing to the dryness of the climate, water conservation is imperative, and by sinking these tanks, they not only conserve the water, but get an excellent binding clay,

FIG. 7



which after it has been a few weeks in the stopes, becomes so compact and solid that a level can almost be driven in it without timber; it thus arches itself naturally, acts as its own support, and prevents undue pressure on the timber.

The advantages of working the mine in this way are: 1. That local

timber can be used. 2. That only a limited quantity is required. 3. That the bulkhead system of building it, gives the maximum strength of the timber to withstand heavy pressures at the minimum cost.

Some of the old levels in the mine which were timbered by sets, have crushed up almost to nothing, and have had to be re-timbered; the levels timbered by bulkheads have at most crushed down two feet and have never since moved.

Fig. 1 gives a complete elevation of a stope in full work. Fig. 2 is a plan showing how the timbers are laid down. Fig. 3 gives a transverse section on the ore pass, M N. Fig. 4 gives a transverse section on the bulkhead J K.

The Cobar Gold Mines, Limited.—This mine consists of a huge outcrop of quartz carrying a low percentage of gold, and depending for its success upon economic working, and handling on a large scale. In the early days of this mine, "pig-rooting" was indulged in, and they burrowed after the small patches of rich quartz, but did no good. The present company erected a 100 stamp battery and a cyanide plant large enough to treat the tailings, and is crushing over 200 tons of quartz every 24 hours—in this case the power to break and treat large quantities of ore has made a success of a mine, which if handled on a small scale would be hopelessly unpayable. The methods adopted here are:

1. An open cut, which is being extended the full length of the outcrop, and will ultimately be benched down to the No. 1 or adit level, from 50 to 60 ft. below the surface; all the broken ore from the open cut is sent down passes to the level, and trucked away to the battery, and the principle is so universal and well known that no description is necessary.

2. Back stoping from the deeper levels which have been driven along the lode from the main shaft.

Instead of forming their levels with bulkheads, as in the copper mine, set-timber is used; these sets are formed of heavy hardwood logs, brought from Dubbo, about 200 miles distant; the sets are 4 ft. apart, with studdles between, and are wide enough to allow for a double-track road and center legs between the tracks. Although these sets are very strong, they would not stand the weight of the filling in the stopes were the quartz reef removed flush with the level for the full width of the lode (from 30 to 50 ft.), hence the quartz is not removed below the caps of the sets, the lode itself thus forming a solid support on either side of the timber as shown in Figs. 5 and 6.

All driving and stoping is done by machine drills, and as soon as the level has been driven and timbered, and the level covered by round poles, E, the stopes are commenced. The reef is worked away from the top of the timber, inclining upward and outward to each wall (as shown by Fig. 5, AA); the broken ore, B, accumulates underfoot, and is used for the men to stand on to work upward, and is withdrawn through the ore chutes, C, which are put in every 10 ft. apart, alternately on either side of the level. As soon as the stope has been worked upward 15 to 20 ft. all the ore is run out and trucked away, and the inclined ore, AA, benched down until it is flush with the caps of the timber, as shown in Fig. 6; round poles, DD, are laid across on top of this bench of ore, from the level to the walls; the poles, E, over the level are covered with brushwood, and the stope is ready for filling. Fig. 7 gives the elevation of a stope from one end to the other, and as in the case of the copper mine the stope is only filled in sections, the principle being exactly the same in both cases. A bulkhead, FF (Fig. 7), is built up, and the stope filled with cyanide sand; the passes, GG, are logged up as usual. As soon as the ground has been filled sufficiently for the miners to get at the back of the stope, a further length of 10 to 12 ft. is worked up, the men standing on the broken ore as before. This ore is then run out, the bulkhead, F, built up higher and the stope again filled. Meantime, as the leading stope is advanced, a fresh bulkhead is built further ahead, the front timbers of the old one removed and another section filled. Owing to the frequency of the ore passes very little handling is necessary, and enough stone is trucked and hauled in eight or nine hours to keep the battery going for the full 24 hours.

The use of cyanide sand for filling is at present obligatory, because this company is cramped for room to dump their tailings; but sand is not a good material for filling the stope, because, unlike the clay filling in the copper mine, it will not bind; hence, if a level be 7 ft. wide and the height of filling over it be 30 ft., the sand exerts a tremendous pressure upon the timber; the consequence is that the caps have broken, and collar-legs have had to be put under them, in the center, to save them. One would further suppose that the cyanide fumes from the sand would be bad, but, as a matter of fact, the ventilation is so perfect that the men never suffer any ill effect, though in a confined, hot mine there is no doubt but that these fumes would be decidedly deleterious.

The object of placing the poles DD (Fig. 6) across the bench of quartz on either side of the level is to facilitate the picking up of the stope when the stopes from the level beneath come up to it; once the ground beneath and on either side of the level is removed the level itself will be no longer wanted and can be allowed to crush in.

Although the ground is fairly strong in this mine, there is a large clay parting rising upward from the north end of the mine toward the south end, and when in the vicinity of this floor the roof becomes heavy and dangerous. In addition to this there are other smaller unseen gossan seams, breast-heads and slippery floors, and it becomes necessary therefore to secure the roof temporarily until these "dummy" pieces of ground are secured; this is done by building up stacks or cribs K K (Figs. 6 and 7), from the sand filling to the roof and wedging them up; in some cases these stacks are put in quite thickly, and are only removed when the stone overhead is to be shot down.

At the commencement of the work stacks were built off the broken ore as shown in Fig. 7, K, but this will not be continued, as it renders it difficult and expensive to get at the roof safely to allow of the removal of the stack and the safe running out of the broken quartz.

(To be Continued.)

NICKEL IN NORWAY.—Capital is being sought to develop the nickel deposits near Haugesund and elsewhere in Norway. Some tests made of the ores have had satisfactory results. The owners have not sufficient capital to open the mines on a large scale.

THE UTILIZATION OF TIN SCRAP.*

By Joseph Richards.

When first I turned my attention to the subject, I found that large quantities of tin scrap and galvanized iron were every day carted to the dumps. I found that the average coating on scrap tin, as tin on tinplate, was 3 per cent.; that the iron, if properly cleaned, could be used in the nobbling furnace and in the puddling furnace; that the use of galvanized iron was a necessary part of the process; and it looked so encouraging that we decided to build a plant to work it on a commercial scale.

I procured a half-dozen of the larger beer casks used for storage, and which are about 6 ft. in diameter and 6 ft. deep. After removing the heads, they were placed in the ground in a semi-circle and a crane was rigged up that commanded all the tanks. In the first tank was charged hydrochloric acid; in the second water; in the third, water with a little lime; in the fourth, water; and in the fifth, a solution of copper sulphate.

The plan of work was to fill a large wooden cage that would hold loosely about 200 lbs. of the clippings. This was swung on the crane and placed in No. 1 tank. In 10 minutes' time the crane was raised and the clippings examined to see if the tin was dissolved. If so, the cage was then lifted out of the acid tank and another cage filled with clippings took its place. The cleaned scrap was washed in the water tank No. 2, lifted up and down to wash it well, and then immersed in the lime tank, No. 3. This neutralized all the residual acid that was left in the pores of the iron. The untinned and limed scrap was then moved to water tank No. 4 for a final washing, then plunged for a moment, just enough to submerge it, in the copper sulphate solution, then immediately removed. The object of this treatment was to form an exceedingly thin film on the iron, to prevent the rusting of tne clean iron, which is so sensitive when exposed to the air that it will almost immediately cover itself with rust. The cleaned scrap was compressed in a drop press into balls, and in this form was shipped to the iron works and worked into blooms for sheets, commanding a price of from $10 to $12 per ton.

After the process had been continued for some time, all the acid in No. 1 tank would become neutralized and we would have a solution of chloride of tin.

The process of tin cleaning stopped here for a while. We then took a cage of galvanized iron scraps, filling the cage loosely. When the zinc came in contact with the tin solution the metallic zinc took the place of the tin, forming zinc chloride, and all the tin was precipitated as metallic tin, in a finely-divided state. We worked this plant successfully for some time, recovering, when melted into ingots, about 600 lbs. of tin from 10 tons of scrap. The recovered iron commanded $10 per ton and the zinc chloride $20 per barrel, for disinfectant purposes and for treating wood to make it fireproof.

We finally closed the works because the objectionable vapors that annoyed our neighbors, with the intention of rebuilding elsewhere; but other things prevented us doing so. I yet think it is the best and most profitable means of utilizing this scrap, especially if electricity is used for depositing the tin.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

LIABILITY OF EMPLOYER FOR DANGEROUS EXPLOSIVES.—An employee who is given charge of dangerous instruments, such as dynamite, represents his employer in the care and custody of same, and is not a fellow servant, and hence the employer is liable for injuries to other employees through negligence in the care of such articles.—Rush vs. Spokane & Northern Railway Company (66 Pacific Reporter, 500); Supreme Court of Washington.

FACTS TO BE DETERMINED BY THE JURY.—Where a party was injured by the falling of a rock from the roof of a mine, in which he was working, it was error in the trial court, in instructing the jury, to assume that it was the duty of the mine owner to keep the roof in safe condition at the point where the accident occurred, as the most that could be done was a submission of the question to the jury whether, under the custom of the mine and the contract of employment, it was the duty of the plaintiff or the defendant to keep the roof in safe condition.—Sandy River Cannel Coal Company vs. Candill (60 Southwestern Reporter, 180); Supreme Court of Kentucky.

SUFFICIENCY OF NOTICE ONE OF FACT.—A notice of the location of a mining claim recited that "this claim shall be known as the 'Clift Mining Claim' and was known as the Susan Ledge, about 2 miles south of Diamond City, Tintic Mining District of Utah." The claim which it was intended to locate was situated about 1½ miles south of Diamond City. The Susan Ledge was well known, and had been a large producer of ore, and its location was fixed and definite. The claim in question had been worked some time. The court held that the sufficiency of the notice was one of fact for the determination of the trial court.—Fissure Mining Company vs. Old Susan Mining Company (63 Pacific Reporter, 587); Supreme Court of Utah.

TUNNEL RIGHTS UNDER UNITED STATES LAWS.—Under the laws of the United States (Revised Statutes, section 2323), providing that where a tunnel is run for the development of a vein or lode, or for the discovery of mines, the owners of such tunnel shall have the right of possession of all veins or lodes within 3,000 ft. from the face of such tunnel on the line of same, not previously known to exist, but failure to prosecute the work on such tunnel for six months shall be considered an abandonment of such veins or lodes, failure to prosecute work on such a tunnel for six months works an abandonment of the

*Abstract of article in the "Journal" of the Franklin Institute, Philadelphia.

right of all undiscovered veins on the line of such tunnel; and the owner of such tunnel is not entitled to a blind vein subsequently discovered, but only to the bore of the tunnel, and a space of surface ground 50 ft. on each side of the mouth of the tunnel, and 100 ft. extending in front of same for dumping purposes.—Fissure Mining Company vs. Old Susan Mining Company (63 Pacific Reporter, 588); Supreme Court of Utah.

THE DAHLONEGA CONSOLIDATED GOLD MINING COMPANY'S PLANT.

Written for the Engineering and Mining Journal by Prof. Wilber Colvin.

As to the work of the Consolidated Gold Mining Company of Dahlonega, Georgia, some reports have gone abroad that expectations have not been fully realized regarding it, and it is true that all things have not panned out according to prospects, thus far. But with some changes in plant and plans that are now in process effected, there is every reason to believe that even better things than at first anticipated will result.

There is no lack of gold ore. There have been some difficulties, and possibly some unwise methods in trying to get at it, and more development work was necessary to be done than was at first realized. The Consolidated Company owns a number of valuable mines, but the big

Breyman Shaft House, Dahlonega Consolidated Gold Mining Company.

mill was located near the Hand Mine, especially for convenience of water both for power and drainage. The several veins of this mine have been successfully worked for many years, but nearly all of the soft ore near the surface had been worked off, and it was necessary almost immediately to go down. The plan adopted was to sink several vertical shafts, and then to drift from these, in some cases requiring cutting considerable distance through very hard rock to find the ore veins. This has been slow and expensive work; and it was found to be economy to keep only a part of the mill running, sometimes to stop it entirely, until much of this preparatory work could be done. It is also true that some errors in judgement were made in the amount of dead work necessary to intersect the ore veins. But while this experience has been costly, it has been valuable. The plan will be more to get upon and follow the veins. They are often faulted, and cannot always be located and readily found by drifting for them. At other mines the company has an abundance of soft ore, but so far it has not worked it, although it expects to do so.

Much of the ore put through the mill was of a low grade, taken out in the development work. It is neither soft ore, nor distinctively sulphuret or hard ore; and it seems to be the most difficult of any to save the gold from. Neither the plates, nor the concentrators catch it, and it washes over and is lost. In this respect the mill has not been a success. It seems that in this ore the particles of gold are exceedingly fine, and are carried away. Ore that assayed $8 to $12 per ton yielded only $2 to $3 per ton.

The company saw that something must be done, and set about doing it. For several months leading men in the company have been making tests with what is called the "Hicks' process," invented by Dr. Thomas R. Hicks, of Fort Wayne, Indiana. Dr. Hicks visited Dahlonega several times and studied the situation. Essentially the process consists in subjecting the ore pulp as it comes from the mill stamps to a mercury bath as it is agitated in a closed barrel at a certain temperature and with devices to keep the mercury from flouring. The experiments with this have been entirely successful. Tons of ore have been tested, and ore of the same kind from which the mill had been saving $2 to $3 per ton yielded $11 to $12 per ton under this process.

There have been numerous and vexatious delays in getting the appliances built and in place in the mill, but perhaps within a month some of these amalgamators will be at work.

These experiments have been so satisfactory that the company managers have every faith that the process will succeed practically.

Meanwhile many reports have gone out not at all flattering or kindly to the Consolidated Company, but the officers, while annoyed at all this delay, are taking it as patiently as possible, fully confident that in a few months it will be demonstrated that they can and will get and save the gold. There is no question of its being here. Meanwhile the company is actively, though quietly, developing its properties, having perhaps 100 men at work, so as to be in good shape when the new appliances are ready for use.

COAL PROFITS IN INDIA.—The Bengal Coal Company, Limited, reports for the half year ending with April last net profits of 447,860 rupees. Dividends of 80 rupees a share were paid, besides buying some additional lands. The report complains of the handling of coal traffic on the East Indian Railway. The trade might be doubled, but the railway is unable to carry the coal or furnish cars.

CHINA CLAY IN BRITISH GUIANA.—The growing use of kaolin in the manufacture of bricks, briquettes, molds, tiles for roofing, pottery, pavement, cement and concrete, is drawing attention to the deposits of the raw material. Investigations in British Guiana show that a superior grade of kaolin is produced on the Corentyne River, while surface outcroppings up the Berbice and Demerara River indicate good clay land. Recently a New York company took a 45 years' lease on some Corentyne deposits, agreeing to take 100,000 tons annually, shipments to be made to New York. Just now the crude methods of working make it almost impossible to produce more than 20,000 tons a year, but it is not unlikely that a modern plant will be erected and the output materially increased. Vessels of 14 ft. draft can easily navigate the Corentyne River, and it is estimated that the freight rate to New York on clay shipped in ballast would be about $2.40 per ton.

MARBLE QUARRYING IN GREECE.—The ancient quarries of green Cippolino marble in the southern portion of the island of Eubœa, which had been discovered after having been lost from sight for nearly 2,000 years, are now being worked by Messrs. Farmer & Brindley, of London, England. This marble is meeting a steady demand, and larger quantities are continually being brought out. The same is true of the marble from Tinos. The Pentelikon quarries are operated by a British company, Marmor, Limited, which has a nominal capital of 14,525,000 dr. ($1,750,000). Mr. Walsh, British consul, says that perhaps during the past year the progress of this undertaking has not realized all expectations. There has been a great outlay in the development of the estate, 6,225,000 dr. ($750,000) having been spent for this purpose, and the installation of railways, of inclined planes, sawing and polishing machines, railway wagons, locomotives, cranes, etc., and the preparation of these facilities for working the quarries has taken longer than was anticipated; by the end of June, 1901, however, it is hoped that everything will be in working order. There is a very considerable demand for this marble in the Greek market, and the company has been fortunate in obtaining the contract for the supply of 211,902 cu. ft. to be delivered in three years for the Stadion in Athens, funds having been left for this purpose by the late M. Averof, of Alexandria. There are indications also that this marble will find a ready market abroad. Inquiries are made from all parts of the world, and several trial shipments have been made to America, where there is a good demand for marble of this kind for buildings. From one of the quarries a huge block of marble has been cut for the statue of Moltke at Berlin, weighing 75 tons, but on account of the freight and other expenses in connection with moving it, the block will be reduced more or less to the actual shape of the statue till its weight reaches 35 tons.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals, and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like will be reproduced whenever possible. Specimens should be of moderate size, and should be sent prepaid. We cannot undertake to return them. If analyses are wanted, we will turn specimens over to a competent assayer, should our correspondent instruct us to do so, and send the necessary money.—Editor E. & M. J.

401.—Lead Minerals.—The ores of lead furnish the mineral cabinet more variety and color than those of any other metal. There are upward of 50 minerals containing lead and among these about every known color is represnted. Some are noted for their beauty and fine crystallization, and with the possible exception of the copper ores furnish the show specimens of cabinets. The lead mineral pyromorphite is usually finely crystalized, the splendid green variety of this mineral as found near Phoenixville, Pa., not being surpassed in beauty by any mineral. Pyromorphite also occurs in light green, light yelow and brown shales. Vanadinite, a lead vanadate, is another showy mineral and is considered by many to be the most beautiful of cabinet minerals. In fine specimens it is ruby red, Arizona and New Mexico furnishing the finest specimens known. The beautiful orange red colored lead mineral crocoite, lead chromate, comes from Australia. It occurs in oblique rhombic prisms when crystallized and is very attractive to the eye. There are a number of beautiful white lead minerals, a few being cerrussite, anglesite and mendipite. Wulfenite, lead molybdate, comes in red, bright orange, yellow, brown and green. The finest specimens of this mineral come from Arizona and New Mexico. New Mexico also furnishes the fine yellow lead mineral endlichite. Linarite, a hydrous lead-copper sulphate, comes in a lovely azure blue color. Lehrbachite, a lead and mercury selenide, is found in fine iron black specimens. Decloizite, a lead vanadate, is found in black, brown and olive green colors. The most beautiful of the lead minerals—wulfenite, vanadinite, pyromorphite, decloizite and endlichite—are found in finest specimens in the United States, New Mexico and Arizona being particularly favored.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Distilling Oil Shale.—Can you tell me where I can find the best treatise on the process of distilling oil from either oil shale or any other form of petroleum rock—that is, hydrocarbonaceous or oil-bearing rock? A process (doubtless of destructive distillation) was in use in Scotland some years ago. Do you know anything about it and the character of the product of the plant?—C. R. B.

Answer.—A description of works built for distilling oil from oil-shale in New Zealand was given in the "Engineering and Mining Journal" July 13th, 1901. These works were modeled on the latest type in use in Scotland. In the last-named country the distilling of oil from shale is still actively carried on. The products are refined illuminating oil, heavy lubricating oil, tar or "black coke," paraffin and sulphate of ammonia. The Scotch companies have been able to keep going in spite of the competition of American and Russian petroleum, though they have had a hard time in some years.

Redwood's "Practical Treatise on Mineral Oils" (price $6 in New York) contains a history of the Scotch shale oil industry and an account of the methods used.

Copper Prices.—Certain copper properties were practically abandoned some years ago, on account of the fall in the price of copper from a high figure to 9 or 10c. per lb. I am informed that this fall was due to the failure of the French syndicate which forced up prices for a time. Can you tell me which were the years of low prices?—J. S. P.

Answer.—The average price of Lake copper in New York for the year 1890 was 15.75c. per lb., the highest monthly average for that year being 17c. in September. From that date to 1900 the yearly average prices were as follows: 1891, 12.88c.; 1892, 11.55c.; 1893, 10.75c.; 1894, 9.56c.; 1895, 10.76c.; 1896, 10.88c.; 1897, 11.29c.; 1898, 12.03c.; 1899, 17.61c.; 1900, 16.52c.

Of course the breaking of the famous Secretan corner in copper was followed by a heavy fall in prices. The main cause of the low prices from 1893 to 1897, however, was the general industrial depression of those years, which extended over all the commercial world. The rise in prices since 1897 has been due partly to a general cause, the revival of trade and manufacturing industry; and partly to a special cause, the rapid increase in electrical work—electric railroads, power transmission and the like—for which copper is indispensable. In fact, the increase in demand from 1897 to 1900 has been greater than that in production.

Prices of Tungsten Ore in Europe.—You have recently made several reference to prices of tungsten ore in the United States; can you say anything about prices in Europe?—W.

Answer.—With regard to the market for tungsten ores in Europe, we find the following statements in the London "Iron and Coal Trades Review" of recent date: "Some useful particulars with regard to the market for the ores of tungsten have lately been brought to light in connection with a proposal made in the Brisbane Parliament, that the Agent General for Queensland should get a weekly London quotation for wolfram. Scheelite is one of the principal ores of tungsten, and the mineral that competes with it is wolframite, $FeWo_4$. But scheelite, $CaWo_4$, is preferred since it is more easily treated for the recovery of tungstic acid. The prices of both minerals as the source of supply of tungstic acid necessarily rise and fall in unison. London, it is claimed, is not the market for wolfram or scheelite, but nearly all these minerals (fully three-fourths) are sold by metal brokers and merchants in Hamburg and Frankfort. The ports to which these should be consigned are not London, but Hamburg, Bremen, and Antwerp, thus saving many intermediate charges. The quantity reckoned as used at works within reach of these three ports is 600 tons annually. At present the chief source of supply is Spain and Portugal, whence about 350 tons of high-grade wolfram ore have been derived during the past 18 months. In these countries it is stated that first-class miners only receive 30 to 36c. a day of 12 or 14 hours' work, and under these circumstances even $2.20 per unit per ton would pay.

"Prices of wolfram and scheelite in the years 1898-1900 ranged remarkably steady till May and June, 1899, at about $5.25 to $6.25 per unit per ton for 50 per cent. to 70 per cent. scheelite. In September, 1899, it was at $5.40, in December at $3.84, January to June, 1900, $4.08. From August to December, 1900, it ranged from $2.04 to as low as $1.80 per unit. The present depression of the tungsten ore market is mainly due to the small demand which has lately prevailed for tungsten metal and the comparative abundance of ores just now. To illustrate this more strikingly it may be stated that during the time when 70 per cent. scheelite ores fetched $7.20 a unit per ton, the metal was scarce and often difficult to buy at $2.88 to $3 a kilogramm; whereas now 96 per cent. tungsten metal is being freely offered in larger quantities from all quarters at $0.84 a kilogram."

Boiler Horse-Power Rating.—In figuring horse-power or heating surface of boilers, is it customary to take the outside or inside measurement of flues? Can you give the government or standard rules for figuring horse-power of boilers?—R. M.

Answer.—It is customary to take the outside measure of tubes—the part which comes in contact with the water—in figuring heating surface. As to standard rules for horse-power of boilers, the only rule approaching a standard is that of the American Society of Mechanical Engineers. This has been heretofore published in our columns, but for convenient reference we reproduce the statement here. That society has had the question considered by two committees, the first appointed in 1885 and the second in 1899. The latter committee substantially approved the work of the former one and recommended the following rule:

"The unit of commercial horse-power developed by a boiler shall be taken as 34½ units of evaporation per hour; that is, 34½ lbs. of water evaporated per hour from a feed-water temperature of 212° F. into dry steam of the same temperature. This standard is equivalent to 33,317 British thermal units per hour. It is also practically equivalent to an evaporation of 30 lbs. of water from a feed-water temperature of 100° F. into steam at 70 lbs. gauge pressure. . . .

"A boiler rated at any stated capacity should develop that capacity when using the best coal ordinarily sold in the market where the boiler is located, while fired by an ordinary fireman, without forcing the fires, while exhibiting good economy. And further, the boiler should develop at least one-third more than the stated capacity when using the same fuel and operated by the same fireman, the full draft being employed and the fires being crowded; the available draft at the damper —unless otherwise understood—being not less than ½-in. water-column."

The usual practice of boiler makers is to allow from 10 to 12 sq. ft. heating surface and 0.33 sq. ft. grate surface to 1 H. P. The kind of fuel used would make an important difference as to grate surface. A convenient rule, given in Kent's "Steam Boiler Economy," for figuring the heating surface of a horizontal tubular boiler is as follows: "Take the dimensions in inches. Multiply two-thirds of the circumference of the shell by its length; multiply the sum of the circumference of all the tubes by their common length; to the sum of these products add two-thirds of the area of both tube sheets; from this sum substract twice the combined area of all the tubes; divide the remainder by 144 to obtain the result in square feet."

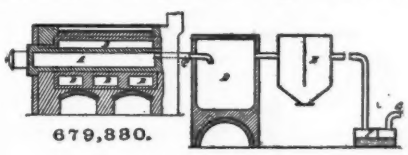
PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending July 30th, 1901.

679,330. PROCESS OF EXTRACTING ARSENIC, ANTIMONY, OR TELLURIUM FROM SULPHUROUS ORES. Elias Petersson, Brussels, Belgium, assignor by mesne assignments to the Intractable Ore Treatment Company, Limited, London, England. A direct volatilization process, consisting in admixing the ore in a powdered state



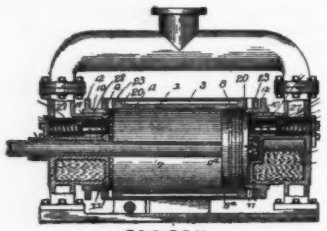
679,880.

with powdered carbonaceous material, heating the mixture while protected from the atmosphere to a temperature sufficient to volatilize such arsenic as may be present as arsenious and arsenic sulphide, and further heating to a higher temperature to volatilize the antimony as antimonious sulphide and also drive off the tellurium, but not to a temperature sufficient to effect a substantial reduction of such remaining sulphides as may be present.

679,343. COMPRESSOR. William F. Singer, New York, N. Y., assignor to the Singer Automatic Ice Machine Company, Jersey City, N. J. A cylinder, a reciprocating piston-rod, a head through which said rod passes, an extensible packing-sleeve surrounding said rod and secured at its fixed end to said head and at its other end to said

piston-rod exterior to said head, and in telescopic casing surrounding said packing-sleeve, one portion of said casing being secured to said head and another portion to said piston-rod.

679,335. AIR-COMPRESSOR. David Pryde and Henry Gauerman, Braddock, Pa., assignors to the Braddock Machine Manufacturing Company, same place. The combination with a cylinder having stationary heads provided with outlet-valves and a stationary body provided



679,335.

with air-inlet ports at its ends, of a reciprocating piston in said cylinder, rings movable over said heads and projecting into said body, and means for reciprocating said rings to alternately cover and uncover said ports.

679,355. AMALGAMATOR. John H. Barr, Kansas City, Kan. An amalgamator, having a vertically-tortuous passage in the form of a series of connected pockets adapted to contain liquid mercury, the surfaces of said liquid mercury forming the bottom walls of said pockets, the cross-sectional area of the passage being greater in vertical planes intersecting the pockets whereby the passage for the pulp may be made of uniform cross-section by the provision of liquid mercury in said pockets.

679,357. APPARATUS FOR TREATING METALS BY ELECTROLYSIS. Anson G. Betts, Upper Troy, N. Y. In an apparatus for refining metals by electrolysis, the combination with an electrolytic vat, and electrodes contained therein; of a track adjacent to said vat; a carriage movable along said track; and mechanism supported by said carriage for mechanically treating the electrodeposits on the several electrodes.

679,384. EXPANDING UNDERREAMER AND DRILL. James M. Kellerman, Los Angeles, Cal. An expansion-drill comprising a stock provided with a transverse opening or way and with an axial shouldered chamber; two bits, each being flat on its inner face and having a circumferentially-channeled neck to seat in opposite sides of said chamber, and also provided with a transverse way to register with the transverse way of the stock; a wedge to seat between the bits to hold them in expanded position and provided with a stem which has a slot to register with the ways of the bits and stock; a pin inserted through the ways of the stock, bits and stem; means for temporarily holding the wedge in its wedging position; and means for forcing the wedge out of wedging position.

679,413. ROLLING-MILL. Thomas Bunker, Red Oak, Iowa. In a rolling-mill, a base-piece, four cylindrical posts or standards, having upper and lower reduced screw-threaded extensions, the base-piece having a screw engagement with the lower post extensions, and a plane-surface engagement with said posts, the top piece connecting said posts, the screw-caps engaging said upper post extensions.

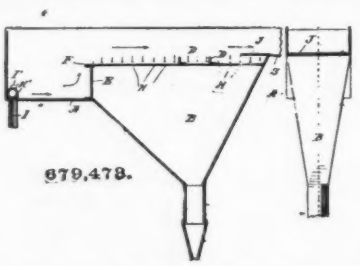
679,427. VITRIFIED BRICK. Marie J. Magarity, Wilmington, Del. A vitrified brick suitable for street-paving, composed of a plastic cohesive material, such as kaolin or clay, constituting the base of the brick and its principal ingredient; a heavy material, such as garnet, hypersthene, or hornblende, giving density and wearing quality to the brick; a counter-shrinkage material, such as quartz-sand or any waste of silica; and an igneous or fluxing material, such as mica-schist, gneiss, granite or syenite, which bonds together the other ingredients.

679,450. APPARATUS FOR HEATING FURNACE-BLASTS. George D. Burton, Boston, Mass. In a furnace, the combination of a windbox, a blower-pipe connected therewith, a coiled pipe disposed in said blower-pipe, a water-jacket, a pipe connecting said water-jacket with said coiled pipe whereby the air-blast is heated by said coiled pipe in its passage to said furnace, and discharge means connected with said coiled pipe.

679,452. ORE ROASTING AND DISTILLING APPARATUS. George D. Burton, Boston, Mass. A rotary furnace for an ore-roasting apparatus, provided with interior hollow electrically-conductive open-ended metallic rods, and with means for connecting said rods with opposite electric poles.

679,454. PUMP. George F. Conner, Port Huron, Mich. In a double-acting pump, the combination of a horizontal casing having a cylinder centrally disposed therein, inlet and discharge passages on opposite sides of and extending parallel with and of the same length as said cylinder, suction and discharge pipes upon opposite sides of the casing and in communication, respectively, with said inlet and outlet passages, the walls of said inlet and outlet passages being enlarged intermediate their ends to form air-chambers independent of said pipes and located upon the interior of the casing.

679,473. GRAPHITE-SEPARATOR. John H. Davis, Glens Falls, N. Y., assignor to United States Graphite Company, same place. A water graphite-separator of trough-like construction provided with means at one end and near the bottom of the trough for admitting water

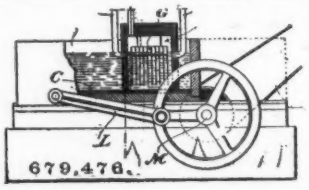


679,473.

thereto, and means at the end for conveying away a portion of the water and the graphite floating thereon; in combination with tailings-conveying pipe or pipes located beneath the trough-like structure and intermediate the ends thereof together with a horizontally-disposed perforated partition located above the tailings-conveying means, the arrangement being such that the entire supply of water is admitted at one end of the machine, while one portion passes out at the other end thereof carrying with it the separated graphite, the remaining portion of the water passing downward and carrying with it the tailings.

679,475 and 679,505. EXCAVATING APPARATUS. Frank K. Hoover and Arthur J. Mason, Kansas City, Mo. The combination with the trays, the principal lever-arms hinged together and pivotally connected with the trays, and auxiliary arms pivotally connected with the trays and a closing-cable connected with one of said principal lever-arms and passing around suitable guides.

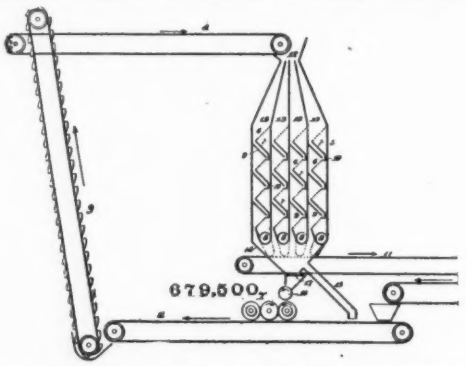
679,476. ELECTROLYZING AND WASHING APPARATUS. John F. Kelly, Pittsfield, Mass. The combination of a washing-chamber, an electrolyzing-chamber dividing said washing-chamber into two variable



679,476.

subchambers, a mercury cathode in said washing-chamber constituting a seal for said electrolyzing-chamber, and means for imparting to said washing-chamber and the body of said mercury a forcible reciprocating horizontal movement.

679,500. APPARATUS FOR SCREENING OR SIZING VERY FINE MATERIALS. Thomas A. Edison, Llewellyn Park, N. J. In appa-

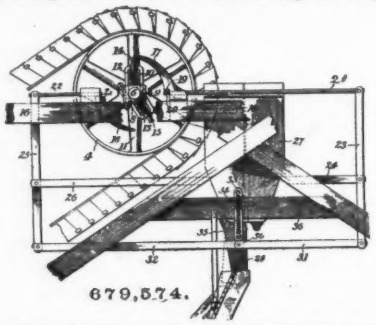


679,500.

ratus for screening very fine material, the combination of a screen, a crushing device, means to divide the tailings of the screen and to pass a proportion of such tailings through the crushing device, and means to convey the crushed proportion and the uncrushed proportion of tailings back to the screen.

679,573. CONVEYOR. George D. Potter, Wallace, Idaho. A belt conveyor, having buckets with articulated sides and base-flanges, the base-flanges of opposite buckets extending half-way across the belt and secured to it, and meeting in the middle of the belt, and serving also as sheathing.

679,574. AUTOMATIC ORE-SAMPLER. George D. Potter, Wallace, Idaho. In an ore-sampler, means for transferring the ore, and a sample-de-



679,574.

flector, combined with a rotary shaft, plungers thereon, and means interposed between said plungers and deflector and actuated by said plungers to vibrate the deflector.

679,578. DRIVE-CHAIN. Louis Schildknecht, Astoria, N. Y. A drive-chain comprising similar links in alternate and intermediate pairs with eyes at their ends and pivot-pins for holding the pairs of links together.

679,648. SIFTING-SCREEN. Albert E. Thornton, Atlanta, Ga. A separating screen comprising a framework having four vertical posts provided with hangers having vertically-adjustable connections with said posts, a series of reversely-inclined screens supported upon said hangers, and means for reciprocating them.

679,716. COMPRESSOR AND PUMP. Arthur G. Enock, Willesden, England. The combination of a cross-head and piston-rod, a projection on the cross-head having a socket into which the end of the piston-rod fits, a collar mounted on the piston-rod, a spring embracing the piston-rod and confined between the collar and projection, a cage secured on the projection and surrounding the spring.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending July 6th, 1901.

12,823 of 1900. STEEL PROCESS. F. L. Tainter, J. L. Smith and R. Bedford, Stockton on Tees. Improved Talbot steel process, with a fixed hearth divided into sections.

14,572 of 1900. REFINING BAUXITE. C. M. Hall, Niagara Falls, N. Y., U. S. A. Refining bauxite by fusing by electric current above the melting point of alumina and so separating the silica, iron and titanic acid.

14,627 of 1900. PEAT FUEL. F. Hasselmann, Munich, Germany. Method of preparing fuel from peat and other mosses.

14,728 of 1900. ROCK DRILL. S. Messropian, Toulon, France. A rock drill consisting of rotating hammers hitting a drill spindle.

15,940 of 1900. BRICK MAKING. W. Schwartz, Zurich, Switzerland. Hardening bricks of silica and lime by steam, keeping them moist with water.

21,497 of 1900. MINER'S LAMP HOLDER. J. Morgan, Tredegar. An improved spike for holding miner's safety lamps.

22,699 of 1900. ELECTROLYTIC SEPARATION OF METALS. H. A. Frasch, Hamilton, Ontario. Improved electrolytes for use in electrolyte separation of metals.

7,603 of 1901. MUFFLE FURNACE DOOR. Fletcher, Russell & Company, Warrington. Improved form of doors for muffle furnaces.

PERSONAL.

Mr. James M. Kennelly, of Salt Lake, is about to leave for his Lower California mines.

Mr. William Lindemeyer is now in charge of the Czar Mine in Hinsdale County, Colo.

Mr. Walter Fitch has returned to Champion, Mich., from a visit to Battle Creek, Mich.

Mr. John Harrigan, of San Francisco, Cal., has removed his assay office to No. 19 Stevenson Street.

Mr. John H. Banks, of Ricketts & Banks, New York City, is on a professional trip in North Carolina.

Mr. H. B. Vercoe, mining engineer and mine owner of Los Angeles, Cal., is en route to London via New York.

Mr. W. M. White, of Salt Lake, has gone to Pioche, Nev., to resume work at the new Manhattan Company's properties.

Mr. Arthur Buckbee, manager for the Virtue Consolidated Mining Company, is in Boise, Idaho, from Baker City, Ore.

Mr. Henry S. Loud, managing director of the British Westinghouse Company, is in Pittsburg, Pa., from his European trip.

Messrs. George T. Weeks and J. A. McDonald, of Denver, Colo., have been looking over mining property about Virginia City, Mont.

Mr. Guy H. Elmore, president of the American Concentrator Company, of Joplin, Mo., is looking over business opportunities in Utah.

Dr. J. L. Mizener, of Smithville, Mo., has been looking over the copper districts of Costilla County, Colo., and of Taos County, N. M.

Mr. W. R. Shilling, formerly of the Red Rover Mine at Acton, Cal., is now superintendent of the Mondoro Mine at Vaughn, Cal.

Mr. James D. Murdoch, of Salt Lake, has returned from a four months' trip abroad through England, Ireland, Scotland and France.

Mr. C. S. Herzig is expected to return to North Carolina next month and resume his examinations of mining property for New York men.

Capt. S. J. Dennis, with Recketts & Banks, of Uew York, is now managing the Indian Queen Mine, Beaverhead, Mont., with headquarters at Butte.

Mr. Andrew Erwin, of St. Paul, Minn., one of the stockholders of the Fortune Mining Company, is looking over the resources of Southern Oregon.

Mr. Wayne Choate, of Detroit, Mich., recently examined the Rainy Creek copper properties, 7 miles from Libbey, Mont., for a syndicate of Connecticut men.

Mr. William Strang, of Braddock, Pa., has been appointed assistant superintendent of the blast furnaces of the National Steel Company at Youngstown, O.

Mr. Perry Williams, general manager of the Century Mining Company's property in Utah, is on a 3 weeks' vacation trip to Buffalo, Boston and other points in the East.

Mr. J. P. Turner, who has been superintending operations at the old Ashbrook Mine for the Salt Lake Mining and Improvement Company, has tendered his resignation.

Mr. F. W. Hoar is now acting superintendent of the Old Dominion Copper Mining and Smelting Company's property at Globe, Ariz., in place of Mr. S. A. Parnall, resigned.

Mr. J. C. Patterson, the Montreal secretary of the Republic Power and Cyaniding Company, who has been in Republic, Wash., 2 or 3 months, has returned to Montreal, Que.

Mr. Don H. Bacon, chairman of the Board of Directors of the Tennessee Coal, Iron and Railroad Company, has been in the Birmingham District for 2 weeks past.

Mr. Max Friend, of London, accompanied by Mr. C. Vercoe, mining engineer, late of London, are examining mining properties in Mexico in the interests of an English syndicate.

Mr. Frank Drake, of Ironwood, Mich., formerly with the Norrie Mine, has been appointed mining engineer for the United States Steel Corporation, with headquarters at Duluth.

Mr. N. F. Thompson, secretary of the Southern Industrial Association, is now in the East and North working up interest in the next convention of the association, which will be held at Memphis, Tenn.

Mr. C. A. Hoyt, who for many years has been chief assayer at the Metallic Extraction Company's mill at Florence, Colo., has accepted the position of manager of the new concentrator now building at Cyanide, Colo.

Mr. Geo. D. Swift, assistant treasurer of the Lake Superior Consolidated Iron Mines, has been appointed to the same position for the entire ore interests of the United States Steel Corporation, headquarters at Duluth.

Mr. Edmund Jones, superintendent of the American Mining Company, which owns mines and mills in the Pispis District, Nicaragua, passed through New Orleans, La., last week to take a vacation at his old home in California.

Mr. W. H. Hassinger, southern manager for the Republic Iron and Steel Company, who has been closely confined to his residence in Birmingham, Ala., for several weeks with rheumatism, has gone to Pascagoula to recuperate.

Mr. S. A. Parnall, who recently resigned as manager of the Old Dominion Copper Mining and Smelting Company at Globe, Ariz., has returned to Laurium, Mich. The report that he was to manage the Mazanal Mine in Sonora, Mex., is denied.

Mr. Charles I. Rader, manager of the furnaces of the Republic Iron and Steel Company in Mahoning and Shenango valleys, has resigned and will go to Salt Lake City to become manager of the Annie Laurie Mining Company. He has been succeeded by Mr. Charles Hart.

Mr. D. C. Jackling, general superintendent of the Republic Power and Cyaniding Company's mill at Republic, Wash., has completed his engagement with that company and taken up his residence at Spokane, Wash. Mr. H. W. Fox, his assistant, has gone to Chicago, Ill., with Thos. J. Dee & Company, gold and silver refiners.

Messrs. Daniel Guggenheim, W. K. Ryan, and others, of New York, associated with the Guggenheim Exploration Company, and F. W. Schofield, general manager of the exploration company; J. K. Dixon and Eugene H. Augert, St. Louis, attorneys of the corporation, were inpecting disseminated lead lands in Missouri.

Mr. H. J. Wessinger, superintendent of the Sauntry Mine and formerly master mechanic of the Minnesota Iron Company, has been appointed mechanical engineer for the United States Steel Corporation, with headquarters at Duluth. Capt. John Gill, formerly of the Oliver Mine, has been appointed superintendent of the Sauntry in his place.

SOCIETIES AND TECHNICAL SCHOOLS.

Missouri School of Mines.—The contract for the erection of the new buildings and improvements at Rolla, has been let to Long & McCaw, of that town, for $23,444. The new building to be erected will be for the mechanical department and will be 150 by 60 ft. in dimensions. Two additional stories are to be placed on the chemical building and 2 wings added to it.

American School of Correspondence.—This school at Boston, Mass., has among its instructors men who are conected with the staff of the technical schools for which Boston is famous and claims unusual advantages for teaching the theory of trades and engineering professions. It offers scholarships for engineering and mechanical drawing. The school furnishes papers guiding the pupil in his work. These papers are stated to be clear and concise in language and superior to ordinary text-books on the subjects of which they treat. In addition special information concerning any difficulties which may arise is furnished the students. The course outlined is described as exceedingly attractive, while it is claimed that no other method so fully meets the requirements for men who have little time for study as teaching by mail. As the number of free scholarships is limited, the offer will soon be withdrawn.

INDUSTRIAL NOTES.

The American Locomotive Company will spend $100,000 in additions and improvements to its Richmond, Va., plant.

The Caldwell-Watson Foundry and Machine Company has let a contract for the erection of a new foundry and machine shop in Birmingham, Ala., to cost over $20,000. The building should be ready within four months.

The Pressed Steel Car Company, of Pittsburg, has shipped to Durban, South Africa, for the Zululand Railway, 10 flat steel cars of 50,000 lbs. capacity each—an exact duplicate of a shipment made some time ago to the same railroad. This is the company's third shipment to South Africa within the last 6 months.

The Fred. M. Prescott Steam Pump Company is making good progress with its new plant at West Allis, near Milwaukee, Wis. The buildings will be of brick, except the office building and pattern shop. The company will have its own foundry when the new works are completed. This plant is near the new works of the Allis-Chalmers Company.

The Balbach Smelting & Refining Company, of Newark, N. J., having outgrown its present plant, has decided to erect a new smelter in the Newark meadows on Newark Bay. The product from the new furnaces will be shipped to the present works to be refined. The contract for the buildings has been awarded to the Berlin Construction Company. There will be a 125-ft. steel stack. The 3 buildings will represent an investment of about $40,000, and will be near the river, so that advantage may be taken of both railroad and tidewater facilities.

The Wisconsin Traction, Light, Heat and Power Company, of Appleton, Wis., has placed an order with the Stilwell-Bierce & Smith-Vaile Company, of Dayton, O., for an extensive water power plant, to consist of 2 units of wheels, each unit containing 3 pairs of 42-in. Victor turbines mounted horizontally. These wheels will be used for driving the main plant and will develop about 3,200 H. P. Two single 24-in. horizontal wheels developing 150 H. P. will be furnished for driving the exciters. The gate work will be of the patented draw rod type.

The Stilwell-Bierce & Smith-Vaile Company has shipped a size F Stilwell improved feed water heater to the Cardiff Coal Company, of Reddick, Ill.

TRADE CATALOGUES.

Joseph T. Ryerson & Company, of Chicago, Ill., in the August number of the "Boiler Maker," call attention to the black and galvanized steel sheets they carry in stock.

Circular No. 63, a little 14-page pamphlet sent out by the Jeffrey Manufacturing Company, of Columbus, O., contains illustrations of coal and ore conveying machinery, screens and mining devices, and is designed to give a general idea of the line of machinery the company manufactures.

The Hazard Manufacturing Company, of Wilkes-Barre, Pa., has prepared 2 little pamphlets for distribution in connection with its exhibit at the Pan American Exposition. The company, in addition to its long-established wire rope business—the company manufactures ropes from Swedish iron, English crucible cast steel and plow steel—has recently started the manufacture of insulated electric conductors. These include waterproof and rubber-covered wires and cables, magnet wire of all shapes, also cotton and silk-covered and special conductors.

Lea electric driven universal grinders are described in an attractive 32-page pamphlet published by the Anderson Tool Company, of Anderson, Ind. In these grinders, it is stated, both motor and machine are designed to work together and are built in the same shop. Practically all work is held between a pair of plain centers or in a vise and the wheel moved instead of the work. The No. 1 machine is capable of cutter and reamer grinding, circular and angle grinding and surface grinding. The company makes large-sized machines for heavy work.

Slingsby's patent trucks, manufactured by H. C. Slingsby of Bradford and London, Eng., are described in a little 116-page catalogue issued by the manufacturer. The trucks are made in a great variety of styles and sizes for use about mills, boiler plants, factories, railroad stations, docks, etc. The trucks have 4 wheels, but only 3 touch the ground at the same time. The single wheels at either end slide freely on their axles and the trucks, it is stated, can be turned easily in their own length. The trucks are also made with an automatic locking device which prevents them from running away on a grade.

Bulletin No. 1,004 issued by the Denver Engineering Works, of Denver, Colo., describes the improved Cammett concentrating table. This table is provided with riffles and grooves running its entire length and the company claims that it makes a very clean concentrate largely for this reason. The concentrator has been on the market 3 years and the improved machine is stated to embody simpler details in certain parts and better mechanical construction in others as the result of the thorough tests to which it has been subjected in actual use. The pamphlet describes the construction of the concentrator in detail.

Surveyors and engineers will find the "Manual of Modern Surveying Instruments" published by the A. Lietz Company, of San Francisco, Cal., a useful work. Catalogue A, a volume of 200 pages, contains full descriptions of the transits and levels made by the company, with directions for the proper care and adjustment of the instruments. Part III of the volume contains articles on stadia surveying, the logarithmic slide scale, hints on selecting a good surveying instrument, the Goldschmid aneroid, a short method of finding the length of 1' of longitude in any latitude, and a description of the Saegmuller solar attachment, and of the cyclotomic transit. The company makes plain transits and

transit-theodolites, the Lietz preliminary transit, the cyclotomic transit and dumpy and Y levels.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Exports of mineral oils from the United States in July were 97,064,259 gals., showing an increase over July, 1900, of 6,832,969 gals. For the seven months ending July 31st the exports were: Crude petroleum, 73,109,429 gals.; naphtha, 11,724,576 gals.; illuminating oils, 448,168,318 gals.; lubricating oils and paraffin, 41 108,109 gals.; residuum, 16,573,956 gals.; total, 590,684,388 gals. For the corresponding period in 1900 the total was 536,564,417 gals.; showing an increase of 54,119,971 gals., or 10.1%, this year.

Pipe Line Returns for July.—The Pennsylvania fields showed considerable increases in runs and shipments during July, while stocks decreased 366,188 bbls., says the Oil City "Derrick." The stocks, now 12,099,866 bbls., are the lowest since April, 1899. The increase in the stocks of Lima oil has been proportionate with the decline in Pennsylvania, the increase for July being 388,442 bb's. The Buckeye runs for July were only 45,001 bbls. greater than for June, while the deliveries were 150,913 bbls. less. The shipments of Pennsylvania oil for July are the heaviest for the year, the daily average being 106,048 bbls. This is the highest daily average since August, 1900, when they were 109,145 bbls. per day. For July the daily average runs of Pennsylvania oil were 94,059 bbls., an increase of 3,633 bbls. over June. Pennsylvania stocks declined 366,188 bbls. in July, while the Buckeye stock increased 388,442, making the net increase for the month 22,254 bbls.

ALABAMA.

Jefferson County.

(From Our Special Correspondent.)

Recently the Means & Fulton Iron Works, at North Birmingham, Ala., accepted a contract from the Republic Iron and Steel Company for a stock-house complete for its furnace plant at Thomas. The contract is valued at about $60,000. The Means & Fulton Company made 4 hot-blast stoves for the new furnaces. The new furnace plant is to be the largest and most substantial in the district.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Argonaut.—The shaft, now down 1,800 ft., is progressing rapidly, no ore being milled. The mine is near Jackson. W. F. Detert is superintendent.

Ivanhoe.—This property, 2½ miles northeast of Plymouth, has been purchased by the Western Pennsylvania Company. It is the intention of the management to expend at least $100,000 in development. There are 2 shafts down 120 and 100 ft., also a mill and other machinery on the property.

Kennedy.—The east shaft at this mine, one mile from Jackson, is down over 2,300 ft., and after sinking 300 ft. deeper, a drift will probably be run to tap the lead.

Kirkwood.—At this mine, 2½ miles south of Jackson, a station has been cut at the 550-ft. and a crosscut will tap the ledge within 50 ft.

Peerless.—The incline shaft at this mine, 2½ miles south of Jackson, is down 800 ft., and crosscutting east and west is in progress on the 760-ft. level. There is a 40-H. P. boiler and a 40-H. P. hoist on the property. Thirteen men are employed under H. Osburne, superintendent.

Zeile.—The shaft on this property in Jackson is down 1,500 ft. and the 1,000, 1,080, 1,215 and 1,350 ft. levels to the north are all worked, but no drifting has been done to the south below the 800-ft., as the ore has given out on that side. The plant comprises a 40-stamp mill and 8 concentrators, all run by water power. There is also a chlorination plant with a capacity of 7,800 lbs. of sulphurets per day, a small cyanide and a slime plant. About 120 men are employed, under W. F. Detert, superintendent.

Calaveras County.

(From Our Special Correspondent.)

Melones Mining Company.—This company has started work on the big mill at Robinson's Ferry.

Kern County.

(From Our Special Correspondent.)

Banner and California Crude Oil Companies.—These companies are located on section 19 in the Kern River fields and will commence development this month. The drilling rigs are already in place.

Good Hope.—This mine, one mile northeast of Randsburg, formerly known as the Kenyon, is reported to have been sold for $10,000. It was the first discovery in the Randsburg District and is said to have produced $200,000.

Monte Cristo.—This company has struck a gusher on its property in the Kern River fields that is said to be producing nearly 1,000 bbls. a day.

Red Dog Mill.—Recent runs at this mill at Randsburg were as follows: Stanford, 75 tons yielded $1,050 in gold, Baltic, 50 tons, $500, and the Santa Ana, 25 tons, $2,000.

Spencer Oil Company.—This company has holdings in the McKittrick fields near the 1901. It will commence work soon. J. T. Wootan is superintendent.

Standard Oil Company.—It is said that this corporation will build 27 more tanks in the Kern River fields for the storing of oil, each tank having a capacity of 35,000 bbls., making a total capacity of 1,000,000 bbls.

Mariposa County.

(From Our Special Correspondent.)

Green Mountain and Lone Tree.—This group of copper claims located about 8 miles from Raymond, has been extensively worked, shipping rich ore to the Selby Smelter. The lowest tunnel is in several hundred feet, crosscutting one vein 65 ft. wide. A higher tunnel also shows large ore bodies. A new air shaft is being sunk to connect with the workings. On the Lone Tree claims large bodies of ore have been developed by shafts and drifts.

Mountain King.—This mine, some 9 miles southwest of Kinsley, has been bonded through the negotiations of L. M. Ludovici, assayer. The ore mills from $30 to $50 per ton and the mine is fairly well developed. Ore obtained in opening up only has been crushed, liquidating all expenses to date. A payment is said to have been made and the price is put at about $100,000.

Nevada County.

(From Our Special Correspondent.)

Brunswick.—It is reported that the 1,000-ft. incline shaft at this mine near Grass Valley is to be sunk 500 ft. deeper, work having already started. This means at least a year's work, during which time the mill will remain idle. Machine drills have been installed.

Crescent.—The Grass Valley Exploration Company will at once begin work on this mine in Grass Valley on Kate Hayes Hill. The shaft will be cleaned out and sinking resumed. The machinery on the Telegraph Mine will be removed to the Crescent.

San Bernardino County.

Peacock Copper Company.—This company has started its 50-ton concentrating plant at Lavic. The plant was furnished by the Colorado Iron Works of Denver. The ore is a sulphide, mostly chalcopyrite. New York men are interested.

(From Our Special Correspondent.)

Buckeye.—The owners of this mine at Ludlow have let a contract to sink a well at least 400 ft. deep, and if water is found 20 of the 50 stamps at the Barstow Mill will be transferred and put at work on Buckeye ore. Development continues, with good results. A hole is also being drilled 2 miles southeast of Johannesburg on the west slope of Red Mountains to find water.

Waterloo.—This silver mine on the north side of Wall Street Canon, near Calico, has been worked for years. The principal claims are the Josephine, Red Jacket and Silver King. The shaft is down 500 ft. and 7 levels have been run, the lowest 3,700 ft. and the others 1,500 ft. each. About 50 tons of ore daily is milled, producing 12 oz. per ton. Only 15 of the 75 stamps are dropping. The company is controlled by Milwaukee people. About 25 men are employed under W. Pluth, superintendent.

San Diego County.

(From Our Special Correspondent.)

Hodges.—Men are at work on this property, located opposite Cibola, on the Colorado River. The mine was recently purchased by E. L. Baker, who represents a Los Angeles syndicate, for $75,000.

Shasta County.

(From Our Special Correspondent.)

Keswick Electric Power Company.—The final payment to the stockholders of the Redding Electric Light Company and the Redding Water Company, for their stock, is made. The net proceeds are said to have been 21½c. per share after the expenses were paid.

McClure.—This group of copper claims adjoining the Bully Hill Mines, was recently bonded by an Eastern syndicate for $60,000 and the first payment is reported made. The 5 claims, including the Recorder and Town Creek, are partially developed, including a 300-ft. tunnel on the Recorder.

Trinity Copper Company.—It is reported that this company has purchased a 3d interest in the Kennett Mine in the Backbone District, a 3d interest in the Copper King and Copper Queen in the same district, and a 3d interest in the Lime Mountain Claim.

Siskiyou County.

(From Our Special Correspondent.)

The output of placer gold this season will exceed that of previous years, and as several large companies have made extensive preparations to increase their capacity, the output for 1901 will probably lead that of the other counties in the State. Arrangements have also been made to equip several large hydraulic mines and add to the dredgers next year.

Highland.—This mine on Trail Creek, 14 miles southwest of Callahan, is producing some high-grade ore. The vein is now 2½ ft. wide, the ore shoot being exposed for about 65 ft. A cross-cut is being run to tap the vein at greater depth.

Salmon River Mining Company.—This company is still working its hydraulic claim on the North Fork of Salmon River, 5 miles northeast of Sawyer's Bar, with plenty of water. It is in the back channel of the Meyer Claim, which is showing rich. The final clean-up will be made by August 31st and is expected to be large.

Siskiyou Hydraulic Mining Company.—The works of this company at both the South Fork and the Wild Cat have been closed down for the season and everything is in order to operate the giants next fall when the water comes. The season lasts about 8 months.

Union Mutual Mining and Development Company.—This company has bonded the Downing Group of mines 7 miles from Hornbrook for $50,000.

Solano County.

Robbery of Selby Smelter.—The robbery of the strong room of $280,000 worth of gold and bullion seems to have been the work of one man, John Winters, 37 years of age, a former employee of the company. On being confronted with the strong circumstantial evidence against him, Winters confessed his guilt. A large part of the stolen bullion has been recovered.

Trinity County.

(From Our Special Correspondent.)

Sweepstakes.—Eighty-six men are employed at this group of gravel claims on Oregon Mountain below Weaverville. About one-half the men are opening up the property for the winter run, on completion of the pipe line. A reservoir is being constructed at the top of the mountain to store water and excavations for the dam have started. A sawmill is building.

Wiser Brothers.—On this claim on Coffee Creek, about 2 miles from the Lawrence Mine, a ledge has been struck said to show several feet of high-grade ore. It is a tunnel proposition.

COLORADO.

Clear Creek County.

Centennial.—Two levels are being driven ahead with air drills in this gold mine at Georgetown. The 600-ft. shaft and some of the old drifts have been timbered, new water pipes and air pipes have been installed, and an air compressor and air drills added to the plant. Col. S. S. Evans is manager for a Boston syndicate.

East Argentine District.—Prospecting and development work continues in this district. Manager Wilcox, of the Waldorf Mining Company, is adding to his force on the Wilcox Tunnel, and has men at work on the Commonwealth. The Independence, Menden and Johnson are also being developed. The Stevens in West Argentine is again producing some good ore from several levels.

Empire Tunnel.—The company is now getting in the steel pipe for the water power line, and expects the air compressor and drills within a short time. Dr. V. G. Hamill, of New York, vice-president of the company, recently inspected the property.

Red Oak.—The concentrator at Georgetown is in operation. It cost $22,000. It covers a ground area 50 by 100 ft. and has 4 floors. The present capacity will be 50 tons a day, but the floor space, crushers and jigs are sufficient for 100 tons. The ore will be brought down from the mine on the tramway and dumped into a chute, which will convey it to the top floor of the concentrator, where 2 Blake crushers are located. From the crushers the ore goes through 2 Davis rolls on the 3d floor, thence through the screens and to the jigs, of which there 5, 3 of them having 3 compartments and the other 2 4 compartments each. The Huntington mill, on the 2d floor, handles a part of the product, and then the finest pulp and slimes will go over 3 Wilfley tables, on the lower floor. The tramway from the mine, nearly 2 miles distant, will have a capacity of 100 tons in 10 hours with 65 buckets, and 150 tons with 100 buckets. The ore body is stripped nearly 2,000 ft. in the drift, showing a continuous streak from 4 to 7 ft. wide,

while in a stope that was recently started near the breast of the drift the streak has opened to 14 ft. of ore of a higher grade than elsewhere.

(From Our Special Correspondent.)

Camp Grove.—Sinking is going on with day and night shifts and the shaft is 200 ft. deep. Phillip Mixsell, of Idaho Springs, is manager.

Gilpin Conuty.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—C. P. Ripley to E. J. Adams, the Hecla Lode in Pine District; R. M. Benoit to Palace Mining and Milling Company, the Pied Piper Group of 5 claims in Silver Lake District; H. D. Sherman to E. J. Carter, ¼ Gold King Lode in Union District; L. Olson to P. A. Linstrom, ½ Notice and Augustin Lodes in Central District; F. M. Beavers to M. Hall, the Smuggler Group of 8 lodes in Wisconsin District; L. Wettstein to A. Wettstein the Mexican, Incas and Surprise No. 3 Lodes in Vermilion District; P. H. Jordan et al. to the Boston-Cleveland Mining and Milling Company, the Arizona Lode in Pleasant Valley District; G. A. Seely to J. Diffenbaugh, 3-5 interest in Treasure Vault Lode in Union District; Joseph Visintin to V. Prevedel, 1-6 interest in Mountain Club Lode, in Pleasant Valley District.

Augusta Gold Mining Company.—Denver and Eastern men are driving a tunnel into Winnebago Hill on the Augusta Vein, presumably the extension of the well-known Freedom Vein. The tunnel is now in 85 ft. G. W. Schneider, of Central City, is in charge.

Saratoga.—The new 80-H. P. boiler is in place and the shipments are to be increased from 40 to 70 tons per day to the new pyritic smelter at Golden. The 900 west level is being extended to reach a point over the Newhouse Tunnel. This level has been driven 1,500 ft. at the rate of 100 ft. per month and will go 600 ft. further. Connections with the tunnel can be made by sinking 400 ft. Detroit, Mich., parties are interested with Ernest Le Neve Foster, Central City, as manager.

Gunnison County.

Forest Hill Consolidated Mining Company.—This company is carrying on extensive work on its group on Forest Hill. The Springfield shaft has been sunk to 400 ft. and has 6 levels. The vein in the first four levels is reported showing well. The company has a good plant of machinery. A jack team is packing ore to Howeville, on the Crested Butte branch of the Denver & Rio Grande, from where it will be shipped to the smelters. The company has under construction a 25-ton concentrating mill 2 miles below the mine, which is to treat the low-grade ores. A tram will be built from the mine to the mill.

Taylor Park Mining Company.—This company is developing the Enterprise Mine at the head of Tellurium Creek. A 6-drill air compressor is located a few hundred feet below the entrance of tunnel No. 3. William Lumsden, of Aspen, is in charge. The officers and directors are Boston people principally, with Thomas T. Goodale, of Boston, as treasurer and managing director. The principal men of the company are: Andrew Preston, Isaac H. Meserve, Charles Driver and William Chadwick, all of Boston; George D. Kilborn, of Cripple Creek, and Henry D. Smith, of Pawtucket, R. I. This company, besides operating the Enterprise, owns 3,000 acres of placer ground in Taylor Park.

Hinsdale County.

La Belle Tunnel.—This tunnel at Lake City is to be run into White Cross Mountain 1,000 ft. further. The company is installing a 25-H. P. boiler and an air compressor. The property has been inactive for some time.

Ocean Wave Mining Company.—The secretary of the interior has affirmed the decision of the general land office dismissing the protest of this company against the entry of the Lillie Lode by the Red Rover Mining Company. The land office department affirms the right of the Red Rover company to the Lillie Lode.

Tobasco.—This company's tunnel near Lake City in the Continental divide is completed, affording ventilation and also allowing the company's properties to be operated from boths dies of the mountain. The tunnel is 1,700 ft. long and gives a depth of 400 ft.

Lake County—Leadville.

(From Our Special Correspondent.)

Leadville Ore Output.—The tonnage averages 2,250 tons a day of all classes of ore. Several of the lead and iron sulphide producers are piling up their tonnage in dumps awaiting a better market.

Big Six Mining Company.—Litigation between the owners and lessees over a settlement of certain stock is ended and the lessees have resumed work on a new shaft near the Penn line.

Butcher Boy.—At 300 ft. in this new shaft on Ball Mountain a drift is being run on very good-looking contact. P. L. Kimberly is at the head of the proposition.

Dunkin Mining Company.—Lessees operating on Dunkin No. 4 shaft are following a streak of hard carbonate which runs 360 oz. silver and 30% lead. They also have a good vein of lead sand.

Evelyn Mining Company.—Sinking has been resumed on this new property on Carbonate Hill, where a big sulphide shoot was caught a few weeks ago at 930 ft.

Fortune Mining Company.—The results at the Resurrection have decided the company to push new work. The present shaft on the Fortune close to the Resurrection is 700 ft. deep and sinking 100 to 200 ft. should put it in the same ore zone. The Fortune is now shipping 300 tons a month of oxidized ore, which will average over 1 oz. gold with high lead percentage.

Homer Placer.—This piece of ground west of the city is owned by the Leadville Drainage and Tunnelling Company that has just started a new shaft and will explore with a diamond drill. The work is on virgin territory. H. I. Higgins has charge.

Ibex Mining Company.—A large amount of new development work is being carried on. Shipments average 250 tons per day, divided equally between sulphide and silicious ores.

Leadville Concentrating Company.—Under the direction of Louis Virdin this mill has been renovated and refitted and has resumed work on zinciferous ores. The tonnage is now chiefly from the Sierra Nevada Claim.

New Leadville Home Mining Company.—On August 20th the company pays another dividend of $12,500. The Penrose shaft has been sunk 68 ft. deeper and drifts and upraises will be driven. Shipments average 300 tons a day. The drifting at the 3d level, 640 ft., will be carried to a known ore body below the present workings.

New Monarch Gold Mining Company.—In the New Monarch new shaft workings it is stated that the shaft has followed the sulphide body down for over 100 ft. A good tonnage is also made from the Little Winnie Shaft.

Phoenix Mining Company.—The company is handling the lower workings of the Sixth Street Shaft and are developing a fine deposit of low-grade iron from which 150 tons a day are shipped.

Printer Boy.—Operations have been resumed by a new leasing company, the Printer Boy Mining Company, headed by New York people. Work is conducted through the old Littler Shaft at a depth of 700 ft.

Rex.—It is rumored that Pittsburg men will unwater and develop this Iowa Gulch proposition, where rich ore was shown by the diamond drill some years ago.

Rialto Leasing and Mining Company.—An effort is being made to settle the controversies between the Eastern and Western stockholders and resume operations. Two meetings were held during the week, at which Vice-President J. O. Burdett and Secretary W. G. Reed, of Boston, were present. The mine was closed because the miners could not get their money owing to a squabble between the stockholders. The property is in the hands of receiver W. G. Brown, of Denver.

St. Louis Smelting and Refining Company.—This company's old plant, the Harrison reduction works, which has been idle many years, is being looked over by Eastern and local people who think of starting a new smelter.

Umatilla Mining Company.—Operations have been resumed on this combination near the Continental Chief.

Ouray County.

(From Our Special Correspondent.)

Caroline Mining Company.—A shaft is being sunk from the main tunnel and is now down 800 ft. and 3,000 ft. below the surface. About 600 men are employed and shipments average 200 tons daily.

Newsboy.—W. H. Allen, manager for the Colorado Springs company now in possession, is in Ouray arranging for increased development. Shipments are regularly made and the force of miners is to be increased.

Ouray Merchants' Mining Company.—This new company has acquired several claims on Canon Creek, West Ouray. It will develop these on a large scale at once.

Ruby Trust.—This old-time producer is worked by Col. Meek, of Lake City. The property laid idle from 1896 until recently. The mill is to be entirely overhauled and some new machinery put in. The shaft is being retimbered.

Treasury Tunnel.—The working force was recently increased from 20 to 60 men and work is being pushed.

San Miguel County.

(From Our Special Correspondent.)

Four Metals Mining Company.—The cross-cut has cut the Palmyra Lode and found it 9 ft. wide. Three feet of this is said to be shipping ore and the balance milling. Drifting has been started and an upraise begun. Six of the principal stockholders, Boston, Mass., people, have been here, and will advise the erection of a concentrating plant. J. H. Shockley, Telluride, is manager.

Ophir Consolidated.—Are installing the machinery in their 100-ton mill at Ophir Loop, and hope to have it running before September 1st. A 1,200-ft. tramway to reach the Silver Bell workings will be put up by the Telluride Iron Works. Thirty thousand tons of second-class ore that will run better than $10 per ton have accumulated on the dumps during the year the property was worked by its former owners, and this, with the output from the mines, will furnish an ample supply for a much larger mill. The management declares the present mill is only experimental. If successful in the saving of values, it will be enlarged sufficiently to treat any possible output. W. S. Buckley, Telluride, manager.

Smuggler-Union Company.—The company has its 100-stamp mill nearly enlarged from 60 stamps, as also the 400-ton cyanide plant. At the Contention Group miners are preparing for stoping. Some 300 men are at present busy. Manager A. L. Collins says that on the completion of the new equipment he can furnish employment to 700.

Summit County.

Excelsior.—The mill at this mine near Frisco is running steadily and 3 more concentrating tables are to be added.

Juno.—Messrs. Cherryhome & Benton have shipped ore from this claim at Frisco to the Leadville smelter. The value in the ore shipped is principally copper, with some gold.

Kokomo District.—The Delker Company is building a road and arranging for a large plant of machinery. The Caledonia shaft is going down. The Maximus lessees have some good gold ore. The Belle of Kokomo is being worked by Leadville parties, who are taking out considerable high-grade lead ore. A large number of prospectors are on the ground.

On Gold Hill the Union Consolidated Tunnel is being pushed. The Lund is building a large ore bin for its ore. On Jacque Mountain the Bancroft is showing up well and are already full. The Free America, Wintergreen, Mayflower, Elsie, Silver Wing, Queen of the West and Bledsoe properties are doing work. The Greene shaft on Elk Mountain is shipping ore daily. The Wilfley mine and mill are running steadily. The double-track tunnel to the Undine is being pushed.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Alamo Gold Mining Company.—A contract has been let for 200 ft. of drifting from the Ophelia Tunnel level to a point beneath the shaft. An upraise of 200 ft. will be made to connect with the shaft.

Consolidated Mines Company—Manager Woods speaks well of recent developments in the Wild Horse Mine. A new shoot has been opened in the 500-ft. level, 250 ft. ahead of previous development. The winze is down 50 ft. and the high values obtained at 30 ft. continue. In the 650-ft. level the width is about 2½ ft., averaging about $50 to the ton.

El Paso Consolidated Gold Mining Company.—The Spratt lease on the Kimberly Claim has been sold to G. W. Armpriester for $7,500 cash. The lease has but a few months to run, but the showing in the 400-ft. level is very good. When the lease has expired the company will work the property from its deep shaft.

Golden Cycle.—Work on the gallows frame is being pushed. To insure protection in case of another fire a brick rim is built several feet into the shaft, with sliding iron gate to cover the entire opening. Pipes are being arranged around the mouth of the shaft so that water may be turned on promptly.

Mollie Dyre Gold Mining Company.—The Foley-Mattox contingent has issued a call for proxies for the annual meeting on September 11th. So also have Dorsey & Bogy, who contend that the responsibility for the idleness of the property lies with Foley & Mattox. Work is no wbeing done on the surface to locate the apex, and a good vein has been opened which may prove to be the Pointer.

St. Patrick Gold Mining Company.—This company, controlled by Scotch capital, has sunk 500 ft. and will sink to 800 ft. The property adjoins the Gold Coin at Victor. Development is going on at the 300 and 500 ft. levels.

IDAHO.

Boise County.

Twin Sisters.—This mill at Idaho City is running day and night.

Twin Springs Placer Company.—This property includes 14 claims at Twin Springs on the Boise River, 35 miles east of Boise. The company has constructed 10 miles of flumes, a steel siphon 4 ft. in diameter and 1,700 ft. long; also mill buildings, etc. The War Eagle Gold Mining Company, owner of the property, has this year leased it to J. K. Woodburn and A. Rumney, who have been working 3 giants with fair results.

Idaho County.

Buffalo Hump District.—Work on the Vesu-

vius has stopped and the working force is now at the Big Buffalo. The pumps have been taken from the Vesuvius and are now pumping out the Big Buffalo. Two shifts are working in the face of the 60-ft. drift. The mill at Calendar is being cleared up preparatory to a run of ore from this level.

Ingersoll.—This group of 4 mines at Horseshoe Bend is to be equipped with a 20-ton roller mill driven by a gasoline engine. F. A. Ingersoll is principal owner.

Lincoln.—This mine at Pearl is to be equipped with a steam hoist and pump.

Silver King.—On this claim at Warren a long crosscut is to be driven to tap the ledge at a depth of 700 ft.

Westview.—This mine at Warren has been unwatered after lying idle 23 years and the owners are going ahead with development.

Owyhee County.

Cumberland.—This mine was shut down on August 7th indefinitely. The reason given is the high price of coal, $16 per ton. The Cumberland is on War Eagle Mountain, near Silver City, and is equipped with one of the best milling and hoisting plants in the State. It is the intention of the Virtue Consolidated Mining Company to install electricity from the Swan Falls plant of the Trade Dollar Company. Arthur Buckbee is general manager.

De Lamar.—A small ore shoot connected with one of the old ore bodies of the mine has been opened in the west workings on the 4th level. The ore is about 4 ft. wide and of good grade.

Joseph.—Irwin, Butt & Morton, who have an option on this claim on Florida Mountain near Silver City, have men at work hauling the surface gravel, which carries fair values, to the Poorman Mill.

Poorman.—At this Silver City mine the shaft is being sunk from 1,000 to 1,100 ft. level.

Shoshone County.

Wallace Mining Company.—An execution has been issued against this company, owner of the Black Cloud mine and mill, for $79,870, on account of a suit brought by James Viles, Jr., wherein judgment was confessed. This is said to be a means for disposing of the Wallace Mining Company's title to the property, after which a new company will take over the holdings of the company and the California Mine. The two properties are at Monarch, 3 miles up Nine Mile Creek from Wallace, and negotiations for a consolidation have been pending for a long time. The Black Cloud, the first quartz location on Nine Mile Creek, was located by O. B. Wallace in 1884. In 1897 he sold it to Thomas McGraw, of Buffalo, who organized the Wallace Mining Company. The stock was all taken by Eastern men. After the organization a water right was located on east Nine Mile Creek, a flume built to a point opposite the mill site, and a 200 ton concentrator was erected at Monarch, connected with the mine by a tramway. A test of the ore showed that the loss of the light carbonates was so great that it did not pay for working and the mill was shut down. The California joins the Black Cloud on the west, and it was worked on a considerable scale from 1889 to 1892, but as much of the ground was broken, ore irregular, the mine has remained untouched ever since.

ILLINOIS.

Bond County.

(From Our Special Correspondent.)

Sorento Prospecting and Mining Company.—This company is to rebuild its burnt top works, erecting a plant modern in every respect.

Sangamon County.

(From Our Special Correspondent.)

Sangamon Coal Company.—This company, with a mine east of Springfield, is equipping its No. 2 shaft with shaker screens.

Springfield Fuel, Light and Power Company.—John Everett, of Chicago, the promoter, has not taken over the properties on which he secured options and the consolidation may not be accomplished.

MICHIGAN.

Copper—Houghton County.

(From Our Special Correspondent.)

Shipments of copper from the smelters continue heavy. The wharves of the Tamarack-Osceola companies at Dollar Bay are still piled up with the metal, about 6,000 tons being on hand.

Calumet & Hecla.—The new man car engine for No. 8 shaft is ready and as soon as the pulley stands are erected it will be put in commission. The engine for No. 7 shaft will be in commission in a few weeks.

The addition to the Hecla Mill at Lake Linden is well under way and the steel work has been completed.

Osceola Consolidated.—The 3-head addition to the mill is well along. Many minor surface improvements are being made at the South Kearsarge.

Tamarack.—The rock-breaking machinery in the shaft and rock house at No. 5 shaft includes 3 Hodge crushers of the reciprocating jaw type. In 2 years 5 more will be installed.

Tecumseh.—Sinking continues in No. 1 shaft.

Wolverine.—The new mill will be completed about the same time as the Mohawk Mill.

Copper—Ontonagon County.

(From Our Special Correspondent.)

Adventure Consolidated.—The extension of the Copper Range Railroad to this mine is completed.

Mass Consolidated.—About 40 drilling machines are stoping. During the first week of the mill run 1,620 tons of rock were stamped; from which it is said 36 tons of mineral were obtained.

Iron—Marquette Range.

Chester Mining Company.—This company has closed indefinitely its Rolling Mill Mine, at Negaunee, producing a lean bessemer ore, there being small demand for the ore.

Negaunee.—This mine is hoisting about 600 tons daily with a temporary plant, and the usual force underground. Hoisting by the permanent plant, newly located, will start soon. The American Mining Company has bought a 7-108th interest in the fee of the Negaunee Mine at a price that makes the entire property worth about $1,500,000. The mine pays a royalty of 25c. a ton, and the output will not exceed 250,000 tons a year for some time. The American Mining Company's lease has about 2 years to run.

MINNESOTA.

(From Our Special Correspondent.)

Some stockholders and officers of the United States Steel Corporation have formed the "Wolvin Building Company" at Duluth and will erect a $300,000 building for the accommodation of the offices of the corporation's ore and transportation interests. The site cost $50,000 and is 100 by 140 ft. The Pittsburg Steamship Company, Oliver Iron Mining, Minnesota Iron, Lake Superior Consolidated Iron Mines, American Mining and other mining concerns and the Duluth & Iron Range and Duluth, Missabe & Northern roads will have headquarters in the biulding and will probably occupy all of it. The offices are now scattered in half a dozen buildings.

Iron—Mesabi Range.

(From Our Special Correspondent.)

C. A. Congdon, of Duluth, has sold to W. P. Snyder, of Pittsburg, the s. e. ¼ of the n. w. ¼ of section 22, T. 58, R. 20, for $450,000 cash. The land adjoining the Myers and d'Autremont purchases of the Consolidated Company made a year or two ago.

Ore has been found in the w. ½ of the s. w. ¼ of section 29, T. 58, R. 20, directly west of the Pillsbury Mine, and is under negotiation for sale. This land was explored by the Consolidated after the purchase of the Pillsbury, adjoining, and turned down on account of a wide taconite ridge that was cut by the various pits and drills. Explorations lately have found that ore probably runs the length of the 80 acres.

Explorations southwest of Hibbing, in sections 31 and 32, T. 57, R. 22, have shown, it is reported, about 12,000,000 tons of ore, of which a small part is a bessemer running pretty well in iron and the bulk is a fair grade non-bessemer.

Drills will be put up at the n e ¼ of 25, T. 57, R. 22, and an exploration carried on there. A drill is being set in the n e corner of section 28, T. 58, R. 20, and explorations will be pushed there. Drills in the s w part of section 27, T. 58, R. 20 have found ore.

Chemung Iron Company.—This company has taken a 40 north of the west end of the Mahoning Mine. Negotiations are on for the sale of another exploration in the same vicinity, forming a part of the Mahoning body, though apparently separated from it by a wall of rock. The Mahoning Company itself has taken some State land just north of its big open pit, where it was supposed but recently that there was no ore.

Fayal Iron Company.—At this mine the stripping operations have partly resumed and will resume fully as soon as negotiations for some lands required for tracks, etc., are closed and a part of the track of the Duluth & Iron Range road moved.

Hawkins Mining Company.—This company has been incorporated with a capital of $50,000, with incorporators as follows: O. D. Kinney, E. B. Hawkins, W. O. Pealer, E. Z. Griggs, S. H. Moer. The company has some lands on the range that are now being developed.

Republic Iron and Steel Company.—This company is shipping its stock-piles at the Franklin Mine. It is to open a property near Lucknow, in T 58, R 19, which it some time ago secured. This is on the line of the Eastern Minnesota. The new work at the Pettit is proceeding rapidly, and that mine will ship considerable ore next year.

Sparta Iron Company.—This company will put in electric lights at its mine in T. 58, R. 17.

Union Iron Company.—This mine is loading its stock-pile and shipments are somewhat larger. The mine has been run slowly and is not likely to ship the expected 200,000 tons this year.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The demand for both zinc and lead ores was lighter and the price of zinc ore fell to $27 per ton, although some settlements were made on a basis of $25 per ton for 60% ore, which brought the price up to $27.50. There was no change in the price of lead, which sold at $23.75 per 1,000 lbs. The different roads were again short on cars and heavy producers refused to accept the lower prices, so shipments of zinc were much lighter than for the previous week, although the lead sales show a substantial increase. Following is the output by camps of the Joplin District for the week ending August 10th:

	Zinc lbs.	Lead lbs.	Value.
Joplin	2,344,440	449,270	$41,510
Carterville	1,586,950	262,230	25,140
Galena-Empire	1,078,350	162,530	16,719
Spurgeon	148,220	77,830	3,588
Oronogo	657,380	4,670	7,984
Aurora	431,600	30,440	5,192
Central City	128,160	9,520	1,631
Zincite	85,820	8,320	3,320
Duenweg	97,270	64,150	2,821
Roaring Springs	128,630	14,770	1,539
Webb City	387,500	21,370	5,147
Cave Springs	104,060	8,250	1,441
Granby	258,000	35,000	2,859
Carthage	169,010	.....	1,353
Neck City	260,600	1,100	3,414
Springfield	66,000	.....	792
Peoria	3,780	56,540	819
Carl Junction	167,160	.....	2,257
Total	8,032,930	1,506,140	$127,222
Total 32 weeks	320,954,690	42,420,580	4,849,708

Zinc value for week, $99,803; lead, $27,419. Zinc value 32 weeks, $3,886,621; lead, $963,087.

During the corresponding week last year the best grade of zinc ore sold at $29 per ton and lead at $23.50 per 1,000 lbs. The zinc sales were less by 454,520 lbs., the lead sales greater by 462,430 lbs. and the value greater by $5,313. Compared with the preceding week, the lead sales were greater by 281,530 lbs., the zinc sales less by 1,150,450 lbs. and the value less by $15,160.

The uncertainty regarding the great steel strike because of the allied trades using large quantities of spelter had an immediate effect on the local market and this with the shortage of cars was responsible for the smaller shipments and lighter values.

New Hope Mining Company.—C. H. A. Dougherty, chairman of the Reorganization Committee of the International Zinc Company, states that this company, incorporated under New Jersey law, will take over the property of the International Company. The company has a capital stock of $150,000, of which $100,000 is common and $50,000 8% non-cumulative preferred stock. The new company will undertake to carry out its plans about September 1st. It is unlikely that it will do any mining itself, but it will probably divide its property of 110 acres into parcels of 10 and 20 acres and lease these parcels for a mining royalty of 20%.

St. Francois County.

(From Our Special Correspondent.)

The labor troubles have all been settled, and the mines are now all at work again on the 8-hour basis.

Columbus, O., parties are now sinking a shaft on what is known as the copper mines tract near Fredericktown, where considerable disseminated lead is said to have been found with the diamond drill.

The new railroad is graded from St. Genevieve to Weingarten, or 16 miles back from the Mississippi River; it is said that Irondale will be the terminus, instead of Bismark, as originally intended.

MONTANA.

Beaverhead County.

(From Our Special Correspondent.)

Indian Queen.—This property on Birch Creek, 6 miles from Apex, is worked by New York people under the management of Capt. S. J. Dennis. A winze sunk from the tunnel level about 65 ft. is all in copper glance ore. The extent of the shoot has not been determined.

Carbon County.

Bridger Coal Mines.—These mines, belonging to Senator Clark, have resumed work after an amicable adjustment of the labor trouble in existence since May. The revised schedule and conditions are stated to be 85c. per ton for cleaned screened lump coal from long wall working; 90c. per ton for screened lump coal from room and pillar working. Twenty per cent. reduction in house rent will be allowed. No discrimination will be made against organized labor.

Deer Lodge County.

(From Our Special Correspondent.)

Emery.—W. I. Higgins, of Deer Lodge, who is now the sole owner, is having installed a new

plant of machinery, including a 16-drill compressor. A new shaft to be 600 ft. deep is being sunk at the foot of the hill. Three cars of ore go weekly to the East Helena Smelter, and the output will soon be a car per day. About 65 men are on the payroll. The mine has been a steady producer for 10 years.

Pike County Placer.—This ground on the Dry Cottonwood, 12 miles from Deer Lodge, which in the early days produced considerable gold, has been examined in behalf of Massachusetts people with a view of placing a dredge thereon. Besides gold, this ground has produced some of the finest sapphires found in the State outside of the Yogo District.

Fergus County.

New Sapphire Mines Syndicate.—This company has about 50 men employed at its sapphire mines at Yogo. The company is shipping its gems direct instead of through Great Falls. The output this year, though large, is not expected to come up to last year's figures, as the water supply may be short.

(From Our Special Correspondent.)

Kendall Gold Mining Company.—The company began work August 1st on a ditch to furnish power for its electric plant, besides water for a pipe line 4½ miles distant. The ditch will be a little less than 2 miles long, 16 ft. wide at the bottom and will be able to convey 10,000 miner's inches of water. It is estimated that about 6,000 miner's inches will be necessary for the power plant. The cost of the ditch and dam will be $10,000. Grading for the power plant has started. Preparations for the new cyanide plant are going forward rapidly. Several thousand feet of lumber are on the ground. The plans have been changed so that the mill will have 500 tons daily capacity instead of 300 tons, as projected.

Spotted Horse.—The shipments of high-grade ore from this mine at Maiden in July were about $6,000, but it is likely that these shipments will stop as soon as the mill at the mine is ready, after its improvements.

Jefferson County.

Eva May Mining Company.—At the Eva May Mine, 7 miles from Basin, the shaft is down 2,650 ft. and a body of good pyritic ore 3 ft. wide, carrying gold and silver values, as well as copper, is reported opened. The company is shipping concentrates to the Colorado Smelter at Butte. There are 32 men at work. The shaft will be sunk 200 ft. deeper. The officers recently elected are: President, G. R. Best, of Milwaukee; vice-president, John G. Mizer, of Ohio; secretary and treasurer, George Drakenfield, of Basin. These, with Thomas Kelly, of Findlay, O., and George Faulhaber, of Cleveland, O., constitute the board of directors.

Montana Central.—The American Smelting and Refining Company, of Helena, has bought a 1-9 interest in this and Monarch lode mining claims, paying for it $1,678. The property belonged to the Largey estate.

Lewis & Clarke County.

Monah.—Two miners of a gang driving a tunnel at this mine near Wickes were suffocated this week by the smoke from a small boiler.

St. Julian.—P. J. Noland has shipped a carload of concentrates from this mine at Emigrant to the Colorado smelter at Butte. The concentrates run rich in gold. Nolan Brothers & Bercy own the property.

Silver Bow County.

Boston & Montana.—An application for a writ of supervisory control, directing Judges Clancy and Harney of Butte to set aside the restraining order preventing the officers of the Boston & Montana Mining Company from completing the transfer of stock to the Amalgamated Company or performing any official act pending the trial, was made to the Supreme Court on August 12th. It is alleged that Judges Clancy and Harney exceeded their jurisdiction, abused their power and issued an order without authority, because it was issued on complaint of John MacGinniss alone with no other showing or proof.

McQueen Placer.—It is said that ore has been encountered in shaft No. 3 by Franklin Farrell. The shaft struck rock at 95 ft. and is now down over 200. The vein struck is said to be about 5 ft. wide with several streaks of copper glance.

Sinbad.—At this claim, a short distance north of Farrel, shaft No. 3, a station is being cut at the 500-ft. and an air compressor placed on the surface. The shaft is also receiving a cage. The operators—Meyer Genzberger and the Largey estate—intend to prospect the ground well. At the present depth the vein is reported about 5 ft. wide, showing good copper values.

(From Our Special Correspondent.)

Minnie Healey.—Some very sensational affidavits have been presented in connection with the case of Miles Finlan vs. F. Aug. Heinze. Finlan's attorneys moved for an extension of time in which to move for a new trial. The affidavits made serious reflections on Judge Harney, who tried the case.

NEVADA.

San Pedro, Salt Lake & Los Angeles Railroad.—It is stated that Senator W. A. Clark has secured an injunction from the court at Carson City restraining the Oregon Short Line—otherwise the Union Pacific—from interfering with this Railroad in Lincoln County.

NEW MEXICO.

Grant County.

Gillette.—The shaft of this mine near Silver City, which was recently filled with water from the 9th to the 7th level as the result of a cloudburst, has been pumped out.

Big Casino.—This mine recently received net returns of $779 for about 7 tons of silver and gold ore shipped to the smelter. Shipments of about 7 tons each are made twice a month.

Stein's Pass.—This district carries lead, zinc, silver and gold. Many lead mines are in operation, shipping several car-loads of ore every week. Should the expected smelter be built at Lordsbury, 20 miles away, Stein's Pass will be one of the liveliest districts in the territory.

Wilson Mining and Milling Company.—This company at present is sinking the working shaft to a depth of 600 ft., expecting to get water for milling. The shaft is now 275 ft. deep. The company has ready to run a 10-stamp mill and good ore supply, but the water question compels a standstill. The company expects to be running full blast by January 1st. J. C. Rutherford, of Stein's Pass, is manager.

OREGON.

Baker County.

Alamo District.—This district is reported very lively. At the Alamo and Quebec groups rich ore is being blocked out for the stamp mills, and extensive development work is in progress at the Strasburg, St. Anthony, Yellowstone, Belcher and many other properties. The Oro Fino Tunnel is in 160 ft. At the Oro Grande Group of 4 claims recently bonded to F. T. Kelly, of Spokane, preparations are being made to drive a long tunnel. W. H. Chambers, of Spokane, is in charge.

Belcher.—This group of 6 gold claims in Quartz Gulch 4 miles from Alamo has been sold by Andy Larsen, E. W. Denton and A. Stearns to the Daines Gold Mining and Milling Company. G. W. Daines, of Danville, Ill., is president of the company and W. H. Jackson, of Alamo, is manager. About 100 ft. of tunnel work has been done,

North Pole.—Forest fires have done some damage to the mine timber supply of this company.

Grant County.

(From Our Special Correspondent.)

Red Boy.—While Messrs. Godfrey & Tabor, owners of this mine, were coming into Sumpter on August 3d, they were held up by 3 masked robbers at the summit on the Granite road. A posse was quickly organized by Deputy Sheriff George Baker, following the robbers, but the country is sparsely settled and little hope is entertained of their capture. The clean-up is estimated at $24,000 for July.

Josephine County.

Klondyke.—At this mine on Louse Creek 4 men are running a lower tunnel. The vein shows 2 to 4 ft. of free-milling rock. The 2-stamp Tremain mill is shut down from lack of water.

Lane County.

Lucky Boy Mining Company.—The company has started work on a dam on Blue River, where it will install an electric power plant to cost $30,000. The plant will furnish power and light for the 15-stamp mill.

PENNSYLVANIA.

Anthracite Coal.

Coxe Brothers & Company.—The machinists and molders employed in the shops at Drifton, who were on strike since June, have applied for their former positions, and the strike is broken. The men gained no concessions.

Bituminous Coal.

All the coke properties of the United States Steel Corporation are now consolidated. All the officers of the former companies retired except those of the Frick Company, which will hereafter have charge of practically all the coking plants and coal tracts. The H. C. Frick, Continental and the American Coke companies remain in existence and operate their plants, as will also the Eureka Fuel Company. The sales departments of all but the Frick Company, however, have been abolished. Thomas Lynch, president of the Frick Company, becomes president of all 4 companies. The Frick Company now controls 4/5 of the production and acreage of the district. The number of completed ovens owned and controlled is 18,385, and about 1,000 are building.

(From Our Special Correspondent.)

There is a brisk demand for coke oven brick. The Reese-Hammond Fire Brick Company and the Joseph Soisson Fire Brick Company are both very busy. At Bolivar the various plants are turning out about 25 car-loads per day.

Hostetter Connellsville Coke Company.—P. F. McCann, of Greensburg, has finished the contract for the $250,000 reservoir for this company at Whitney. The capacity of the reservoir will be over 3,000,000 gal.

Mt. Pleasant Coke Company.—This company has completed a group of 200 beehive ovens, with a capacity of 25 to 30 cars of coke daily. The company will make low phosphorus bessemer and foundry coke. The product of the plant will be handled by the Tri-State Coal and Coke Company, of Pittsburg.

SOUTH DAKOTA.

Lawrence County.

(From Our Special Correspondent.)

Central City District.—There are 4 mills in operation near Central City. The Portland Mining Company is operating a 50-ton stamp mill with a cyanide annex. Central City parties have purchased the 25-ton cyanide plant that was formerly owned by the Dakota Mining Company and are treating ore from the Cornucopia Mine, in Deadwood Gulch. Dave Nelson and C. K. Weedon, of Central City, have leased the old Hildebrand stamp mill and cyanide annex, at the mouth of Blacktail Gulch and experiments are being made on some rich cement ore found west of Central City. The Esmerelda Mines and Mill have been started by the former owners, Faust & Son. It is expected that the DeSmet mill belonging to the Homestake Company will start up in a few days. A car-load of machinery was tumbled over a bank while being let down to the mill, and a duplicate order was necessary.

Chicago & Two Bit Company.—Water has stopped work in this company's mine, in the Two Bit District.

Garden City District.—Soren Jensen and Joseph Kellar have leased the tailings at the old chlorination plant in the Garden City District and have erected 2 tanks. The old tanks in the mill have been burned and considerable gold is being extracted from the ashes. The lower workings of the Realization Mine, owned by Ernest May and associates, of Lead, has been unwatered and development is in progress.

Homestake Company.—Work on the pipe lines from the stamp mills on the north side of the hill to the site of the second cyanide plant has started.

Portland Mill.—New boilers are being installed at this stamp mill, at Central City. This company is treating 50 tons of ore daily by wet crushing and cyanide.

Spearfish Mining Company.—A track is being built 2,500 ft. long at the Spearfish Mine, at Ragged Top, to the mill.

Pennington County.

(From Our Special Correspondent.)

National Smelting Company.—The new smelter at Rapid City, it is said, will cost $250,000. Some stone work on the foundation has been done; 25,000 cu. yd. of dirt will be moved. The retaining wall will be 200 ft. long and 20 ft. high. The main building will be 85 by 200 ft. The business men of Rapid City have donated the company the old chlorination works near the mill site, with 4 roasters, nearly new. A reverberatory furnace will be built. This old plant has a 400-H. P. engine, 3 chlorinating barrels, crushers and rolls. The smelter, it is said, will be 500 tons daily capacity, with 2 stacks. The smoke stack will be of steel, 150 ft. high, on a 28-ft. stone foundation. Dr. H. H. Muggley, of Boston, is general manager of the company, and Theodore Knutson, formerly superintendent of the Deadwood & Delaware Smelter, is superintendent. It is reported that the company will be able to treat custom ore for $6.50 per ton and that freight charges from the Northern Hills mines will be $1 per ton, making the total cost about $2 less than at the Golden Reward Company in Deadwood.

Spodumene Shipments.—F. P. Williams, of Hill City, has shipped 4 car-loads of spodumene to New York and another car will be shipped soon. The ore is mined at the Etta tin mine, east of Hill City.

TEXAS.

Jefferson County.

Beaumont Oil Field.—Four gushers were brought in in as many days last week. Two were on Spindle Top Hill, in the Hogg-Swayne syndicate territory, the Darragh Oil Company's 6-in. well, drilled by J. W. Sturm, and the Cattlemen's Oil Company's, a 6-in. well drilled by Tremmell, Turner & Hart, of Houston. There are now 24 gushers in this field.

Navarro County.

Corsicana Oil Field.—But 2 wells were completed during July. At the close of the month but 2 wells were drilling and but 3 rigs up. The total number of completed wells in the Corsicana field on August 1st was 1,070, of which number 605 are producing, 213 have been abandoned, 23 were gas wells and 229 were dry holes.

UTAH.

Beaver County.

(From Our Special Correspondent.)

Copper King.—This group of 6 claims has been

purchased by the Blue Bird Copper Company. The original owners are John and James Forgie, of Milford.

Box Elder County.

Pine Canyon Gold Mining Company.—This company, with a capital of $100,000 in 20c. shares, has been organized in Salt Lake to develop the Mount Emmer and Pine Tree group of 8 claims, situated in the Park Valley range. A. R. Carter is president; John A. Hunt, vice-president; Alvias E. Snow, treasurer; Walter E. Maddison, secretary, and James Rosenear and William H. Rowe are the other directors.

(From Our Special Correspondent.)

Excelsior Gold Mining and Milling Company.—This company has been organized to develop the Homestake, Homestake No. 2, 3, 4 and 5, Clement and Emma Claims in Park Valley District. Capital stock is 250,000 shares at 10c. each. W. A. Hodges is president; Eugene Hodges, vice-president; Ethan J. Jeremy, treasurer, and F. Hodges, secretary. These and Wm. Cowan are the directors.

Juab County.

(From Our Special Correspondent.)

Boston & Tintic Mining Company.—The Frankie Group, at Tintic District, has been turned over to Wm. H. Tibbals and others. The consideration is $30,000. A new board was partially organized. R. L. Lyman, Georgia M. Richardson and E. A. Farrington were named to take the place of G. S. Peyton, E. W. Genter, Edw. Richards and N. R. Watterman.

Buckeye.—The court has been petitioned by Receiver Sharp to reject bids made for the property, alleging collusion in bidders.

Eagle & Blue Bell.—On the 400 level gold ore assaying $110 per ton is reported. The extent of the strike has not been determined.

Yankee Consolidated Company.—The following officers have been elected: P. A. H. Franklin, president; J. M. Gambill, of Du Bois, Pa., vice-president; L. A. Amsden, secretary, and E. W. Genter, treasurer. These, with Geo. F. Goodwin and J. W. Merrill, complete the new board. Superintendent Guenther's report states that ore has been opened up in 7 different places in the mine and sufficient is now being marketed to meet the payroll and provide for necessary development purposes. The company's indebtedness is $15,000.

Salt Lake County.

Bingham Consolidated Mining Company.—The company has organized permanently and elected these officers and directors: President, J. A. Coram; vice-president, Clarence K. McCornick; treasurer, O. E. Weller; general manager, O. P. Posey; general superintendent, Duncan McVichie; directors, J. A. Coram, Clarence K. McCornick, O. P. Posey, P. L. Kimberly, E. L. White, O. E. Weller, William Bayly, W. C. McCornick, John W. Weeks. L. T. Trull and W. J. Freeman have been elected temporary directors.

(From Our Special Correspondent.)

Ben Butler.—Geo. S. Smith has sold the Leona Lode to F. B. Beatty for $13,500, and the latter has transfered same to this company for same consideration.

Sevier County.

Galena.—A Mr. Wolverton has bonded this claim on Miners' Mountain of Bullard Brothers & Baker for $5,000 and has taken in 7 men and supplies.

Summit County.

(From Our Special Correspondent.)

Hawkeye-McHenry Mining Company.—This company has been organized to develop the McHenry Lode No. 2, Hawkeye Lode, Hawkeye Lode No. 2, I. X. L. Claim, Caledonia, Caledonia No. 2, Red Cloud Nos. 1, 2, 3 and 4, Argus Murray, Side Hill and Utah Terra. Capitalization is $300,000, divided into shares at $1 each. H. D. Niles is president; John J. Daly, vice-president; J. R. Walker, Jr., secretary and treasurer, and O. J. Salisbury and J. T. Donnellan directors. Considerable development work has been done in the past.

Tooele County.

(From Our Special Correspondent.)

Advocate.—This company's stock has been placed in escrow preliminary to the taking over of the property by W. F. Snyder and associates of Salt Lake City.

June Bug.—For a consideration of $25,000 James Long has purchased this group from Charles Jukes and Arthur and Gus Howlett.

Utah County.

(From Our Special Correspondent.)

Overland.—It is stated that since July 15th enough ore has been marketed to pay $4,500 back wages on payroll and expense bill for one month. Ten men have been employed for 20 days and 5,000 tons ore milled. There is yet $4,500 due on June payroll.

Wasatch County.

(From Our Special Correspondent.)

Harwood Mining Company.—This company was organized with a capital stock of 150,000 shares at 10c. each. The property is located in Blue Ledge Mining District, and comprises the Lost Boulder Claims 1, 2, 3 and 4 and Horn Silver Claims 1 and 2. R. T. Kimball is president; W. L. Harwood, vice-president; L. B. Wight, secretary, and W. W. Arnisby, treasurer. These, with W. A. Dennis, H. Paull and W. I. Snyder, are the directors.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

The Victoria, Vancouver & Eastern and Grand Forks & Republic railroad companies are cutting right of way and are grading roads into Republic from Marcus, Wash., and Grand Forks, B. C.

Apache.—The shaft is down 35 ft. At 22 ft. a rich streak was struck that runs high in gold, silver and copper.

Black Tail.—Work underground has stopped for the present, and 2 men are prospecting on the surface.

Butte & Boston.—The north drift on the 265-ft. level is in 155 ft. and shows ore 4 ft. wide, assaying about $68 in gold and $10 in silver per ton.

El Caliph.—From 2 to 3 tons of ore are stoped daily, and shipments to the smelters continue.

Park & Central.—Nine men are employed. A drift on the vein lately interesected is in 30 ft. The pay streak runs from 12 to 20 in. wide and carries native silver and argentiferous galena, asasying from $30 to $60 per ton.

Princess Maud.—The winze is down 416 ft. below the adit level, the vein averaging 5 ft. wide with the ore of fair shipping quality.

Ramore Group.—Six men are employed on the adit level. A blind lead has been struck 6 ft. wide, carrying gold, silver, copper and lead, being good concentrating ore. Galena and chalcopyrites are the principal minerals.

Republic Gold Placers.—A flume 2,600 ft. long has been completed and 100 ft. of ground sluice boxes laid by the Little Falls Company. A general clean up will be made in a few days. The discovery claim is proving profitable.

Republic Power and Cyaniding Company.—The last bullion was shipped August 3d and the mill closed the next day. George Lanskail, secretary of the company, remains in charge at Republic.

Wasco.—The shaft is down 30 ft. on a pay streak 30 in. wide, carrying gold, silver and copper. The tunnel is in 168 ft. and is expected to intersect the main vein at about 265 ft.

Okanogan County.

Palmer Mountain Gold Mining and Tunnel Company.—John Boyd, of Loomis, general manager of this company, has sent out a long report on the company's property. The report states that the company owns 52 claims, in a solid group from 1 mile to ½ mile wide and 2 miles long, on Palmer Mountain. Water power of Teats Ceulee Creek capable of furnishing 3,000 H. P. has been secured. The tunnel, 8 ft. high and 9 ft. wide, has been driven 4,000 ft. and is to be 8,600 ft. long when completed. Twenty-eight ledges have been cut, with varying gold values. Drifts have been started on most of the large veins. No machinery for treating the ore has been secured, but according to the report 97% of the ore opened can be treated by stamp mill and cyaniding. A 50-drill compressor and 100-stamp mill over to be installed immediately.

The company 3 years ago issued statements that a mill was to be erected at once. The present report does not say why some of the money spent in driving the long tunnel was not spent in working the large ore bodies said to be opened. Possibly the stockholders have not wanted returns on their investment before.

WEST VIRGINIA.

Flat-Top Land Association.—This company, of which E. W. Clark, of Philadelphia, is president, has extended to October 1st the option to sell its 232,483 acres of Pocahontas coal lands. The syndicate holding the option is said to represent Charles M. Schwab and Pennsylvania Railroad interests. A corporation, it is said, is being underwritten in New York to take over the Flat-Top, Crozer and Jeager coal lands, in all about 400,000 acres.

FOREIGN MINING NEWS.

AUSTRALIA.

Tasmania.

Mount Lyell Mining Company.—This company's statement for four weeks ending July 24th shows 21,008 tons ore smelted, the product being 740 tons blister copper, containing 732 tons fine copper, 46,518 oz. silver, and 1,433 oz. gold. The average return was 3.48% copper, 2.20 oz. silver and 0.07 oz. gold to the ton.

CANADA.

British Columbia—Caribou District.

Consolidated Caribou Hydraulic Mining Company.—A bar of gold bullion weighing 6,700 oz. and valued at $110,000 was received at the New York assay office from the Bank of Montreal on August 13th. The bar represented the season's run at the company's property at Quesnelle Forks.

SOUTH AMERICA.

British Guiana.

(From Our Special Correspondent.)

Gold production for the six months ending June 30th is reported at 54,726 oz., this being the quantity on which royalty was paid.

Dutch Guiana.

(From Our Special Correspondent.)

The gold production for the six months ending June 30th is reported at 332.34 kgs. For the first half of 1900 the total was 442 kgs., showing a decrease of 109.66 kgs. this year.

French Guiana.

(From Our Special Correspondent.)

Gold production for the five months ending May 31st is reported at 1,071.76 kgs., which compares with 924 kgs. in the corresponding period of 1900. This shows an increase of 147.76 kgs., or 16%, this year.

COAL TRADE REVIEW.

New York. Aug. 16.

Anthracite.

The demand for anthracite holds up remarkably well. The production for the first half of August is to be on the basis of 4,000,000 tons for the month. This is a very slight restriction and shows how general the demand still is. There has been no midsummer dulness, and the stocks of coal in the hands of producers were actually smaller on July 31st than on July 1st. Prices are firmly maintained, and there is apparently no favoritism shown to middlemen. All stories of cut prices are felt to be foolish yarns and in the East, at least, customers know better than to try such stories on sales agents. Probably there has never been a time in the history of the trade when prices were as closely regulated as this year. It really looks as though the great anthracite industry were to be put on a profit-paying basis, after years of excessive competition and over-production.

It is interesting to note the part played by the Temple Iron Company in the present regulation of the trade. With a board of directors comprising the presidents of most of the coal-carrying roads, the company's authority is unquestioned. It is not a "trust" and cannot be touched by anti-trust legislation, but it can act firmly, quickly and decisively. Its incorporators probably had no idea of its great development, but it now occupies a unique position in the history of the trade.

The demand for coal, though well distributed, is strongest from the West. Eastern demand is not expected to be active until cool nights come in September. At the head of the Lakes coal is arriving more freely, but the movement from docks is good and an actual shortage in the supply this winter is quite possible. In Chicago territory insufficient lake receipts continue to call forth complaints from dealers whose yards are filling but slowly. Buying for the winter season is starting and retail trade is improving. At lower lake points business is beginning to look up. The movement of coal by water is freer than at any time this year. The rate from Buffalo is 35c. to Lake Superior points and 50c. or even more to Lake Michigan ports. Along the Atlantic seaboard dealers at the large cities are well stocked. Those at the shoal water ports are getting in winter supplies.

The August prices for free-burning white ash f. o. b. New York Harbor ports are: Broken, $3.90; egg, $4.15; nut and stove, $4.40.

Bituminous.

The Atlantic seaboard soft coal trade shows some improvement. There is a considerable volume of business done in a quiet way and the total tonnage moved is fairly large. There are no blockades at the loading ports; there are, however, enough cargoes discharging at some of the receiving ports to cause delays there. Coal is going forward steadily on old contracts and the movement for winter supplies is underway. The shoal water ports are taking coal as fast as vessels can be secured to transport it.

Trade in the far East is fairly active and all ports seem to be receiving coal in good supply. Along the Sound trade is quiet. Demand is a little off and amounts taken are not up to the average. New York Harbor trade shows signs of more life, but is still dull. All-rail trade is active and is taking considerable coal in a regular way.

Transportation from mines to tidewater is very good. Car supply is up to all demands. In the coastwise vessel market vessels are in irregular supply, being bunched badly. Coastwise freight rates are firm. We quote current rates from

Philadelphia as follows: Providence, New Bedford and Long Island Sound, 60c.; Boston, Salem and Portland, 70c.; Wareham, Newburyport and Bangor, 85c.; Lynn, 80c.; Gardiner, 80c. and towages; Portsmouth and Bath, 75c.; Dover, $1.15 and towages; Saco, $1 and towages. Rates from the farther lower ports are 10c. higher.

Birmingham. Aug. 12.

(From Our Special Correspondent.)

The Alabama coal market presents a little better condition this week than it did the first of the month. The mines in Jefferson County are working fairly well now, the mines of the Sloss-Sheffield Steel and Iron Company and the Republic Iron and Steel Company being the only ones where work is not going on every day in the week.

The shipments of coal for export from the Bibb County mines are quite heavy, 60 to 70 carloads going away daily. The coal is going to Pensacola and thence to Tampico, Mex., and to Galveston, Tex. The contract will last for the next twelve months over the route named.

The Southern Railway, which now controls the Mobile & Ohio Railroad, has a surveying corps in the field in the neighborhood of the Tuskaloosa County coal mines and a track will be built taking in the coal properties of the Alabama Consolidated Coal and Iron Company and other mining concerns in that county. This will afford another route from Tuskaloosa County to the Gulf.

Cleveland. Aug. 14.

(From Our Special Correspondent.)

The supply of tonnage for the movement of coal to Lake Michigan points does not increase and there is very serious talk now of an increase in the freights. Shippers confess that they are very far behind their orders and also that they cannot get all of the boats which the amounts of coal they have on hand demand. Some of the vessel men are sending their boats up the lakes light rather than accept the 40c. carrying rates. Shippers to offset this tendency are chartering vessels for ports other than Chicago and Milwaukee, which are the principal ports of contention. The supply of coal at the lower lake docks is a little better than it has been during the last few weeks, but it is by no means up to the requirements of shippers. The lack of coal is directly attributable to the inability of the railroads to supply sufficient rolling stock for the movement of the material. The supply is short mostly on the docks which handle the Pittsburg coal, as the ports toward the west end of Lake Erie seem to be getting about all of the material from the Hocking and the Shawnee fie'ds which they can handle. The shortage of coal at this time is lamentable because the boats are abundant now and the demands in the other trades are not such as to make them want to go back to the head of the lakes light to immediately take advantage of more favorable conditions there. In fact, the situation of the ore market is inclined to persuade the vessel men to allow their boats to take coal to Duluth rather than to rush back light after ore. The carrying rates hold firm at 35c. to Duluth and 40c. to Milwaukee.

Pittsburg. Aug. 14.

(From Our Special Correspondent.)

Coal.—The strike of steel workers has affected the Pittsburg Coal Company, as several large mills that it supplies with coal are closed. This company has the contract to supply the National Steel Company, the American Tin-Plate Company and the American Steel Hoop Company. All of these companies are affected by the strike. As a result, it is said, prices of coal must drop, as all the mines are still in full operation. The river mines are all runnig full. The Monongahela River Consolidated Coal and Coke Company is not affected by the strike, as it still has a number of empty coal boats and barges to load an dit supplies the Carnegie and other mills that are not closed by the strike.

Connellsville Coke.—Prices remain unchanged. Furnace coke is quoted at $1.75@$2 and foundry at $2.25@$2.50. The production and shipment last week show a slight loss compared with the previous week. Of the 21,747 ovens in the region 20,069 are active and 1,778 are idle, a gain of 108 active ovens. The production was 237,897 tons, a decrease of 232 tons. The shipments aggregated 10,875 cars, distributed as follows: To Pittsburg, 3,776 cars; west of Pittsburg, 5,050 cars; east of Connellsville, 2,049 cars. This is a decrease of 203 cars.

Foreign Coal Trade. Aug. 16.

Few new contracts for export are noted. There is a fair amount of business to the West Indies and South America.

Recent clearances of coal-carrying ships from Philadelphia include 1,000 tons for Cartagena; one cargo, 2,879 tons Eureka bituminous, for Marseilles, France; one cargo, 2,553 tons Westmoreland, Pa., coal, for Havana. From Baltimore, one cargo was cleared this week, 4,250 tons, for Buenos Aires.

An indication of the state of the coal trade in Great Britain is found in the fact that Cumberland Coal Owners' Association have informed the representatives of the men that, owing to the reduction in the price of coal and the depression in trade, they must claim a substantial reduction in the wages of the men to enable them to compete with other districts. They ask for a reduction equal to about 25% of the present wages.

Messrs. Hull, Blyth & Company, of London & Cardiff, report under date of August 2d that at Cardiff coals are very steady round last week's price. The firm tone has been well maintained. Quotations are: Best Welsh steam coal, $5.04@$5.16; seconds, $4.68; thirds, $4.44; dry coals, $3.84; best Monmouthshire, $4.20@$4.32; seconds, $3.84@$3.96; best small steam coal, $2.52; seconds, $2.16; other sorts, $1.92.

The above prices for Cardiff coals are all f. o. b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

On the near approach of the holidays stems are scarce and freights continue very easy, especially for prompt loading. Some rates noted are, from Cardiff: Marseilles, $1.50; Genoa, $1.62; Naples, $1.62; Port Said, $1.92; Singapore, $3.48; Las Palmas, $1.50; St. Vincent, $1.68; Rio Janeiro, $3.42; Santos, $3.84; Buenos Aires, $3.42.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 220.)

New York. Aug. 16.

The market generally shows a fair degree of activity; better than is usually the case in August.

Heavy Chemicals.—While business for immediate delivery is quiet, contracting for 1902 delivery is more active and a good business is reported. Orders are being booked for domestic alkali for 1902 delivery. Caustic soda is quieter. Bleaching powder is in moderate demand only.

Prices per 100 lbs. are given as below:

Articles.	Domestic. F.o.b. Works.	Domestic. In New York.	Foreign. In New York.
Alkali 58%.	77½@82½	....	85@87½
" 48%.	82½@87½	....	.....
Caustic Soda, high test ..	$1.90@$1.92½	.....	1.85@1.87½
powd. 60%.	.....	2.75	.....
70@71%.	.....	2.85	.....
98%.	....	3 25	3.75@4.00
Sal Soda	.55	.65	67½
" " conc.	1.25@1.50	....	1.75
Bicarb. Soda.	1.05@1.10	.....	1.37½@1.75
" " extra	3.25@3.50	.....	.....
Bleach. Pdr., Eng. prime.	.....	....	2.00@2.10
other br'nds	.. ..	....	1.50@1.90
Chl. Pot. cryst	....	8.25@8.37½	9.75@10.00
" powd.	....	8.37½@8.62½	10.25@10.75

Acids.—Buyers continue to discuss the higher prices asked, and some are still holding off in the expectation that makers will recede somewhat from their position.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No.8	$1.62½	Nitric, 38°	$4.35
Blue Vitriol	4.12½@4.37½	Nitric, 40°	4.50
Muriatic, 18°	1.35	Nitric, 42°	4.87½
Muriatic, 20°	1.45	Oxalic	5.50@5.75
Muriatic 22°	1.60	Sulphuric, 66°	1.20@1.30
Nitric, 36°	3.87½	Sulphuric, 60°	1.0?@1.10
		" bulk 50° ton	14.00

Pyrites.—Business is good, both in imported and domestic pyrites. The trade seems to be satisfactory. Prices are unchanged. We quote, per ton, as follows: Mineral City, Va., lump ore, all sold, and fines, $4.20 per long ton. Charlemont, Mass., lump, $5, and fines, $4.75. Spanish pyrites, 12c. per unit delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51% of sulphur, American from 42 @44%.

One cargo of iron pyrites, 3,830 tons, was received at Baltimore last week.

Brimstone.—Trade is moderate and no change can be reported. Prices remain at $22.25@$22.50 per ton for spot best unmixed seconds, and $21.50 @$21.75 for shipments. Best thirds are about $2 less. The freight market is firm, and tonnage for September is still reported scarce.

Sulphate of Ammonia.—Gas liquor is in fair request, and sales of domestic are reported at $2.75 per 100 lbs., while foreign varies from $2.72½ @$2.75, according to position.

Nitrate of Soda.—The trade is somewhat more active, and the tendency is to firmer prices, though it can hardly be said that there has been an advance as yet. Spot is still quoted at $1.87½ @$1.90 per 100 lbs., and futures at $1.95.

Messrs. Jackson Brothers write from Valparaiso, Chile, under date of July 13th: "During the fortnight transactions in nitrate have been very limited and amount to only about 450,000 qtls. Producers, due to already having sold the greater part of their production, are very firm at former prices and no business has been done in 95% for this year's delivery under 6s. 5½d. alongside, and in 96%, 1%@6s. 8d. alongside; the latter quality being scarce and difficult to procure. For the year 1902 sales have been made at 6s. 2½d. alongside in monthly lots from April to December. The exports during June were 1,578,400 qtls., making a total for the present year of 12,283,000, as against 11,790,500 in 1900. We quote 95% any delivery this year at 6s. 5d., January 6s. 4½d., and 96% 1% this year 6s. 7½d., January 6s. 6d. per quintal all ordinary terms sellers. The price of 6s. 5d. with an all-round freight of 27s. 6d. stands in 8s. 6d. per cwt. net cost and freight, without purchasing commission. Reported sales for the fortnight, 303,000 qtls."

The "American Fertilizer" says: "The niter beds of Nevada, located near Lovelock, in Humboldt County, are at last to be opened and their product put on the market. The American Niter and Potash Company, of San Francisco, which owns nearly 2,000 acres of niter-carrying land, is now making arrangements for the erection of a plant on its deposit. Machinery is being contracted for which will soon be shipped to Lovelock. Water, which it was thought would have to be piped a number of miles, has been found on the company's land. The hills and plains have been filled with prospectors and locators, looking for new beds of the valuable mineral. The original owners of the Nevada niter beds were W. H. Hamilton, of Oakland; Joseph S. Jordan and A. W. Wehe, of San Francisco. They have been in possession of the lands for a number of years, but it was only last year that the American Niter and Potash Company was incorporated."

Basic Slag.—Mr. John C. Brain, of New York, representing the Standard Fertilizer Company, has on a deal with the Bessemer Land and Improvement Company, 12 miles south of Birmingham, Ala., looking to the purchase of a tract of land of about 20 acres on which a fertilizer and cement factory is to be constructed. It is intended to put up a factory that will cost something like $250,000, and blast furnace slag will be used in the manufacture of the commodities named. There will be a daily output of about 150 tons of fertilizer and cement.

Phosphates.—Domestic buying is for immediate use only, and the fertilizer manufacturers do not seem to be putting in large stocks. Export trade is moderately active, with considerable inquiry reported. For 1902 delivery abroad Tennessee miners quote high-grade rock at $3.85 per ton, f. o. b. Mt. Pleasant, while Florida hard-rock people ask over $7 f. o. b. Fernandina. South Carolina mines state that no crude rock is now being sold for vessel shipment, as the demand is entirely for dried rock. Quotations are as below:

Phosphates.	Per Ton F. o. b.	C i. f Un'd Kingdom or European Ports. Unit.	Long ton.
*Fla. hard rock (77 @ 80%)	$6.50@7.00	7 @7½d	$10.92@11.89
*Fla. land pebble (68 @ 73%)	3 85@4.00	6 @6¼d	8.40@ 8 57
*FlaPeace River..(68@68%)	2.50@2.75	6 @6¼d	7.20@ 7 50
†Tenn ... 78@80%, export.	3.50@3.85	6¾@7d	10.53@10.92
†Tenn.....78% domestic.	3 00	.....	.....
†Tenn.....75% "	2.75	.....	.....
†Tenn.....70% "	2.25	.....	.....
§So. Car. rock, dried rock	3.50	.....	.....
Algerian, rock....(63@70%	.....	.....	.....
Algerian, rock...(58@63%)	....	6@6½d	8.04@8.70
Tunis, Gafsa.....	.....	5¾@6d	6.60@7.20
.....	.....	5½@6d	6.60@7.21

* Fernandina, † Mt Pleasant. § On vessels, Ashley River.

Freight rates from Florida ports are about as follows: To Baltic ports, $5; Continental, $3.60@ $3.90; Mediterranean, $4.20@$4.56; United Kingdom, $4.

From Savannah, Ga., to Continental ports, $3.48.

According to the latest reports, the consolidation of some of the companies in the Tennessee phosphate field has been consummated, the purchase of most of the properties being based upon 80c. per ton. A corps of engineer will be organized immediately and begin the estimation of the capacity by tons of the various properties. About $2,500,000 is involved. Mr. George H. Rogers, of the export firm of Rogers, Holloway & Company, Philadelphia, has been mainly instrumental in effecting this consolidation, embracing the Howard, International, Blue Grass, American, Jackson, Harlan and the French companies, and others at Mt. Pleasant and in Lewis, Hickman and Sumner counties. The following companies are said to be independent: M. E. Wheeler, Petrified Bone Manufacturing Company, Columbian Phosphate Company, Ruhm Brothers, J. D. Frierson, Mrs. J. M. Kittrell, J. T. Craik, Son & Company, Tennessee Phosphate Company, Hall Brothers, Major L. Long, Griffith Brothers, National Acid Company, Southern Chemical Company, Tennessee Chemical Company and Read & Birmingham Company.

Liverpool. Aug. 7.

(Special Report of Joseph P. Brunner & Co.)

Since our last report our markets have been of a holiday character and at the moment there is little sign of any immediate improvement in the demand.

Soda ash is in fair request at usual varying

prices as to destination. For tierces, the nearest spot range is about as follows: Leblanc ash, 48%, £5 15s.@£6 per ton; 58%, £6 2s. 6d.@£6 7s. 6d. per ton, net cash. Ammonia ash, 48%, £4 10s. @£4 15s. per ton; 58%, £4 15s.@£5 per ton, net cash. Bags, 5s. per ton under price for tierces.

Soda crystals are very steady and a fair business going on at generally £3 7s. 6d. per ton less 5% for barrels, or 7s. less for bags, with special terms for certain export markets.

Caustic soda in moderate demand at late rates. We quote as follows: 60%, £9@£9 5s.; 70%, £10@ £10 5s.; 74%, £10 10s.; 76%, £10 17s.@£11 per ton, net cash.

Bleaching powder continues dull and difficult to move, but quotations are nominally unchanged at about £7 per ton, net cash, for hardwood, with special quotations for several export markets.

Chlorate of potash is offering at 3⅛d.@3¼d. ped lb., net cash, but buyers are rather indifferent.

Bicarb. soda is in quiet demand at £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages; also special terms for a few favored markets.

Sulphate of ammonia is not active, but prices are very steady, the production and demand being pretty evenly balanced. Nearest spot quotations are about £10 17s. 6d.@£11 per ton, less 2½%, for good gray 24@25% in double bags, f. o. b. here.

Nitrate of soda is moving off quietly on spot, at £9@£9 2s. 6d. per ton, less 2½%, for double bags, f. o. b. here, as to quantity and quality.

IRON MARKET REVIEW.

NEW YORK, Aug. 16, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Aug. 17, 1900. F'ces.	Tons.	Week ending Aug. 16, 1901. F'ces.	Tons.	From Jan.,'00. Tons.	From Jan., '01 Tons.
An'racite & Coke.	220	239,575	235	297,325	9,258,365	9,488,178
Charcoal.	20	5,375	22	6,625	231,592	259,463
Totals..	240	244,950	257	303,950	9,489,957	9,747,641

The blast furnace reports for August 1st show a slight falling off—7,275 tons—in the weekly capacity of the active furnaces. The production is still on a very large scale. It does not seem to exceed consumption, as the changes in unsold stocks are very small.

The strike continues, of course, the main topic of discussion in the trade. The failure of the Amalgamated Association to bring out the men in the Chicago District or to stop the Carnegie mills is a big point against them; and the general opinion is that the strike will not be a long one. It is felt that the managers of the association have made a mistake.

There is some talk of a scarcity of material in certain lines. The only points where it is much felt are in black sheets and tin-plate, the latter especially being in demand. This is the season when requirements are largest, and premiums are being paid for early deliveries.

Birmingham. Aug. 12.

(From Our Special Correspondent.)

Announcement made during the week that some export orders for pig iron had been placed in this district and that shipments thereon would commence immediately, was the only news in the pig iron market in this district. The official investigation of the sales books of the Sloss-Sheffield Steel and Iron Company and of the Tennessee Coal, Iron and Railroad Company during the past week divulged the fact that the Sloss prices were under those of the Tennessee Company, and as a consequence coal miners who have a contract conditioned on the selling price of pig iron are getting a smaller wage from the Sloss Company than from the Tennessee. The average price being obtained for pig iron by the Tennessee Company is under $11. The Sloss Company's average price would appear to be under $10.50.

The Sloss-Sheffield Steel and Iron Company has started up one of the North Birmingham furnaces and has blown out one.

The following quotations are noted; No. 1 foundry, $11@$11.25; No. 2 foundry, $10.25@$10.50; No. 3 foundry, $9.75@$10.25; No. 4 foundry, $9.25 @$9.75; gray forge, $9@$9.25; No. 1 soft, $11@ $11.25; No. 2 soft, $10.25@$10.75.

In the steel plant at Ensley 6 of the 10 open-hearth furnaces have been in blast right along. There is a fairly good demand and it is believed that there will be need for all the steel that can be made at that plant. The work of improving the plant so that all of the 10 furnaces can be operated are being pushed. Very little is being said about the steel rail mill, which is in an almost completed condition. Rumor has it that efforts are being made to start it up in the near future.

The statement is made that the Tennessee Coal, Iron and Railroad Company proposes to make a number of substantial improvements about its property at Ensley. A new battery of soaking pits is being put in at the steel plant and it is intended to build a mill for the manufacture of cotton ties. The Tennessee Company will make extensive improvements about its machine shops at Ensley and may put in a merchant iron plant also at the same point. An official of the company states that $100,000 will be expended about these works.

Buffalo. Aug. 13.

(Special Report of Rogers, Brown & Co.)

The buying movement which is now due appears to be held back by the uncertainties arising from disturbed labor conditions, so that with the exception of occasional buyers placing contracts for blocks of 5,000 to 8,000 tons each there is little doing in the way of ordering. Of this kind, however, there are enough to give a fair volume of new business. The conditions of supply and of prices are uneven. Several furnaces tributary to this market have already sold beyond their ability to supply during the balance of this year, trusting to some postponement of deliveries to keep them at peace with their customers; other brands less popular are not well sold ahead; the one set firm in prices held well up to the top of the market, the other a little tender in its solicitude to fill order books for the next four months. The attitude of buyers is well expressed in two transactions which are before us to-day; the one buys boldly 5,000 tons for a delivery running through the first quarter of next year, the other after considering for a week the purchase of 100 tons postpones the act to await further developments. Meanwhile the consumption of pig iron is going on at a tremendous rate and so far as we can see locally stocks are rapidly vanishing. We quote below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $15.50; No. 2, $15; Southern soft, No. 1, $15; No. 2, $14.75; Lake Superior charcoal, $17.50; coke malleable, $15.

Cleveland. Aug. 14.

(From Our Special Correspondent.)

Iron Ore.—The demand for wild tonnage among the ore shippers is not as brisk now as it was a week or so ago, due to various causes. Primarily it is a resultant of an overplus of tonage at Escanaba which caused an overflow to the other ports. The other cause is a congestion at the lower lake docks that is so serious as to promise no relief for some weeks to come. The shippers therefore are not chartering freely for future movements, depending very largely for the next supply of ore upon the contract tonnage. The movement of the material down the lakes promises to be as heavy as the capacity of the receiving docks will permit regardless of any present action on the part of the shippers. The carrying rates remain as they have been quoted all summer at 80c. from Duluth; 70c. from Marquette, and 60c. from Escanaba. The prices at which ore sales are made now do not vary, as the transactions are very light. Bessemer is bringing $4.25 and non-bessemer $3. Mesabi ores are quoted on the same basis as non-bessemer.

Pig Iron.—The market shows an increase of interest. Sales for immediate delivery have been heavier in the foundry grades, but nothing of any consequence is being done for delivery during the remainder of the year. Prices hold steady at $14 and $13.50 at furnace for Nos. 1 and 2 respectively, with talk of an advancing market being heard. Bessemer is looking up and the sales for the remaining months of the year are beginning to satisfy the furnacemen. The price holds firm at $15.25, the market being strong. The demand is increasing and inquiries are heavy.

Finished Material.—The Ohio Mill of the National Steel Company has been taken off of the production of billets and sheet bars and put back to rolling rails. This is out of consideration for the increasing demand for rails, the producing capacity of which is limited, when compared with the amount of material to be produced and shipped before the end of the year. Billets and sheet bars, however, are in fair demand, some heavy orders having been placed this week. Billets are quoted at $24, sheet bars at $25 and small billets at $27. Rails are still being sold in small quantities at the old prices, $28 being the basis. Some ship material has been contracted for during the week, the American Ship Building Company taking 6,000 tons in one lump. Plates are still bringing 1.70c., Cleveland; beams and channels are also quoted at 1.70c. The supply is a little easier and some mills are offering deliveries in fairly good time. Bars are in big demand, but the shutting down of some of the producing capacity has made deliveries in short time rather hard to obtain. The prices do not change, 1.40@1.45 being quoted on steel bars at Pittsburg mills and 1.50 on iron bars, also at the mills. Some sheets are left in stock, although the mills are not making many promises on deliveries from the material being produced. One-pass cold rolled are bringing 3.95c. and No. 10 blue annealed out of stock 2.50c.

Old Iron.—The scrap trade is brisk. The dealers have temporarily prevented a falling of prices which was threatened and the business is good on old quotations. No. 1 wrought, $15; heavy steel, $15; cast borings, $6; wrought turnings, $10.

Philadelphia. Aug. 15.

(From Our Special Correspondent.)

Pig Iron.—The region east of the Allegheny is practically free from all manner of strike disturbances. Small advances in wages have been made at various points and a spirit of contentment prevails. Careful inquiry this week among all pig iron interests does not develop a single interesting point. It is not admitted by pig iron people that there is any downward tendency in any direction. The furnace capacity of eastern and middle Pennsylvania has been figured down pretty close by interested parties and it is concluded that the entire production will continue to be absorbed. To-day's quotations for bessemer were given at $15, though business might be done at less. Basic is $14.25; No. 1 X foundry, $15.50@$16; No. 2 X foundry, $15; No. 2 plain, $14.50; standard gray forge, $14; ordinary, $13.50. Business done shows some little variation from these figures.

Muck Bars.—One lot of muck bars went at $29 f. o. b., but this is regarded as a little above the market.

Billets.—There is an improved demand for billets this week on a basis of $25.50, but consumers prefer to buy only as they need. Offers at $26 for forward delivery do not bring favorable replies from buyers. The billet situation is not clear.

Bars.—All our mills are doing well. There is harmony on prices between the east and west. Western mills let the Eastern trade alone, except on an occasional order for steel bars.

Sheets.—The prices while nominally 3.80c. are 4@4.20c. for No. 28 and may go higher on prompt deliveries before the week is out. The mills are crowded. Since Monday large requirements for early winter have been figured on.

Pipes and Tubes.—Premiums are the rule and not half the business offered is taken on the conditions proposed. The trouble with skelp is that Western people are trying to grab it. In fact, manufacturers are running away from business coming from other than their regular customers.

Skelp.—There is a dearth of skelp. Prices are anywhere. Western manufacturers of pipe are hard up and are putting Eastern consumers to trouble.

Merchant Steel.—Tool steel is quite active and in one or two other lines our business since Monday has shown quite a boom, but it comes from the smaller concerns, which appear to be getting unnecessarily frightened.

Plates.—Large lots of plate could be entered at mills if certain concessions were made. It is said on very good authority that large buyers will not contract quite so far ahead as usual. There are signs of catching up here and there. Quarter-inch and universals are 1.80c.; flange, 1.90@2.10c.

Structural Material.—Those who speak for this branch of the steel business speak only in general terms as to trade prospects. The belief exists that there will be no let-up in demand for some time to come. The books of bridge iron and steel makers have a prodigious amount of work under contract, some calling for delivery next year.

Steel Rails.—Business in rails is rather peculiar. There is considerable demand for exceptionally light and exceptionally heavy rails for standard-guage roads; also for girder rails for trolley roads. An authority on trolley road work thinks the time is close when there will be a general expansion. For standard sections our people cannot be induced to say there is a heavy demand and they also decline to corroborate some views expressed in newspapers that there is a rush of orders for 1902.

Old Rails.—A proposition or two is before rail mills looking to the exchange of some mileage of old rails for new. Quotations are $19@$20 for iron and $16 for steel.

Pittsburg. Aug. 14.

(From Our Special Correspondent.)

The iron and steel markets continue to suffer to a certain extent as a result of the strike. Prices, however, are firm except in gray forge and foundry iron. Several thousand tons of gray forge and foundry iron were sold, the rate being about the same. Bessemer steel billets are a trifle firmer this week, but only a few small sales were made. But little was done in open-hearth billets. The steel plate market is more active than other lines of finished material. In addition to some large sales there were a number of inquiries from ship-building concerns. Prices are firm and unchanged. Steel bars are not in active demand and only a few lots were contracted for this week. Stiff premiums are still being offered for black sheets and the independent mills are turning down orders daily. A number of new independent sheet mills are rapidly being completed and some will be in active operation within the next 60 days. The most important are those being erected at Clarksburg and Parkersburg, Newcomerstown

and Youngstown, O. The bar mill at the Anchor Works of Neil Brothers on the South Side was put in operation last week and the sheet mills went on to-day.

The steel strike has not reached the proportions anticipated by the Amalgamated Association officers when the general strike order was issued last week. It was not obeyed by the union men in the big plants of the Federal Steel Company at Chicago, Joliet and Milwaukee. If these works had been closed the United States Steel Corporation would have been seriously crippled. As it is the large mills of the Carnegie Company and the Federal Steel Company, which are among the most important owned by the Steel Corporation, are not affected at all by the strike. Strong efforts have been made to induce the workmen at the Carnegie plants in this city, known as the Union Mills, to quit and the lower works were badly crippled to-day, but new men are being secured. The American Steel Hoop Company has succeeded in starting the Clark Works and the Lindsay & McCutcheon plant is in partial operation. The 46 mills of the American Sheet Steel Company on the West Penn Railroad are in full operation. They are Vandergrift, 21 mills; Leechburg, 10 mills; Apollo, 6 mills; Hyde Park, 5 mills, and Saltsburg, 4 mills. This company caused great anxiety among the residents of McKeesport when it issued an order to remove the Wood plant to the Kiskeminetas Valley, owing to the antagonism of the citzens and the refusal of the authorities to permit men to be brought to the city to operate the works. The work of dismantling the mill began on Saturday. It was stopped yesterday and it is reported that the men are to be given another opportunity to return to work. This, however, is denied by the management to-day. Repairs on the big Monongahela tin-plate plant on the South Side have been discontinued and the announcement made that the works will not be operated this winter. The Republic and Elba works of the National Tube Company in this city are idle, the skilled workmen obeying the general strike order. The tube works at McKeesport are also seriously affected by the strike. The plants of the National Steel Company at New Castle and Mingo Junction are idle.

Pig Iron.—No sales of bessemer pig iron are recorded this week. The price remains at $15.25, Valley furnaces, or $16, Pittsburg. About 2,000 tons of gray forge were sold at $14 and about the same tonnage of foundry No. 2 at $14@$14.25, Pittsburg.

Steel.—Only a few small lots of bessemer steel billets were sold. Prices this week are a trifle firmer, being $24 for delivery within two months. Open-hearth billets are quoted at $26@$27. Very little was doing this week in steel bars, but the price remains at 1.50c. There is a good demand for tank plates, about 7,000 tons having been sold this week at the ruling price, 1.60c. An unusual number of inquiries are being received from ship-building concerns.

Sheets.—The demand continues heavy and sharp premiums are offered. The minimum price received for No. 28 gauge is 4c. All the independent mills are in full operation and the American Sheet Steel Company is operating all of its mills in this section except those at McKeesport and Chartiers. The latter plant is being moved to Leechburg.

Ferro-Manganese.—The leading producer is out of the market at present, the last sale of 80% domestic having been made at $58.50. Foreign product is quoted at $53.50@$55.

New York. Aug. 16.

Pig Iron.—The local market continues quiet and new business is very light. We quote for tidewater delivery: No. 1 X foundry, $15.25@$15.75; No. 2 X, $14.75@$15.25; No. 2 plain, $14@$14.50; gray forge, $14@$14.25. For Southern iron on dock, New York, No. 1 foundry, $14.75@$15.25; No. 2, $14@$14.50; No. 3, $13.25@$13.75; No. 4, $12.75@$13.25; No. 1 soft, $14.75@$15.25; No. 2, $14@$14.50.

Bar Iron and Steel.—The market continues quite strong. We quote 1.48c. for common bars in large lots on dock; refined bars, 1.58c.; soft steel bars, 1.65c.

Cast Iron Pipe.—Prices are unchanged. Owing to the large number of new buildings erected the local demand for small sizes this year has been excellent.

Plates.—Demand holds steady. We quote for tidewater delivery in car-loads: Tank, ¼-in. and heavier, 1.78c.; flange, 1.88c.; marine, 1.98c.; universals, 1.78c.

Steel Rails and Rail Fastenings.—There is little doing in the local market. Standard sections are quoted at $28 at Eastern mills; light rails at $28@$30, according to weight. Spikes are 1.80c.; splice bars, 1.55c.; bolts, 2.60@2.70c.

Structural Material.—Consumption continues good. We quote for large lots at tidewater as follows: Beams, 1.75c.; channels, 1.75c.; tees, 1.80c.; angles, 1.75c.

Nails.—There is a fair demand, with prices the same as for months. We quote for large lots on dock: Wire nails, $2.53; cut nails, $2.13.

METAL MARKET.

New York. Aug. 16.

Gold and Silver.

Gold and Silver Exports and Imports.
At all United States ports in July and year.

Metal.	July.		Year.	
	1900.	1901.	1900.	1901.
GOLD.				
Exports	$3,972,739	$2,785,571	$33,713,411	$32,276,797
Imports	11,263,332	1,658,808	27,889,199	17,586,778
Excess	I. $7,990,593	E. $1,126,763	E. $5,824,212	E. $14,690,019
SILVER.				
Exports	4,913,658	3,838,447	35,284,144	32,272,449
Imports	3,344,093	2,217,112	22,193,181	17,352,378
Excess	E. $1,569,565	E. $1,621,335	E. $13,090,963	E. $14,920,071

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending Aug. 15th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$1,003	$41,242	$623,675	$156,532	E. $426,904
1901..	25,793,318	1,819,822	20,049,894	2,465,262	E. 41,557,128
1900.	36,338,195	1,673,926	24,366,284	2,862,137	E. 55,164,416
1899..	11,550,543	8,079,784	17,229,556	2,219,056	E. 18,481,269
1898	4,613,583	71,901,698	21,115,929	1,976,847	I. 52,149,012

Gold imports and exports were small, the latter being chiefly from the West Indies. The silver imports were principally from Mexico, while the exports went chiefly to London.

The United States Assay Office in New York reports the total receipts of silver at 96,000 oz. for the week. This makes a total of 2,151,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1901.		1900.		1899.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	28.97	62.82	27.30	59.30	27.42	59.36
February..	28.13	61.06	27.49	59 76	27.44	59.42
March.....	27.94	60 63	27.59	59.81	27.48	59.64
April.....	27 30	59 29	27.41	59.59	27.65	60.10
May.....	27.43	59.61	27.56	59.96	28.15	61.23
June.....	27 42	59 57	27.81	60.42	27.77	60.43
July.....	26.96	58.46	28.23	61.25	27 71	60.26
August....	.....	.....	28.13	61.14	27.62	60.00
September	.....	.....	28.85	62.63	27.15	58.89
October ..	.....	.....	29.58	63.83	26.70	57.98
November	.....	.....	29.66	64.04	27 02	58.67
December.	.....	.....	29.68	64.14	27.21	58-99
Year....	.....	.....	28.27	61.33	27.44	59.58

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1901.	1900.	1901.	1900.	1901.	1900.	1901	1900.
Jan	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4 65
Feb.....	16.38	15.78	26.68	30.58	4.35	4.675	4.01	4.64
March...	16.42	16.29	26.03	32.90	4.35	4.675	3.92	4.60
April....	16.43	16.76	25.93	30.90	4.35	4.675	3.98	4.71
May.....	16.41	16.34	27.12	29.37	4.35	4.121	4 04	4.53
June.....	16.38	15.75	28.60	30 50	4.35	3.901	3.99	4.29
July.....	16.31	15.97	27.85	33.10	4.35	4.030	3.95	4.28
August..	.....	16.35	.....	31.28		4.250	.....	4.17
Sept.....	.....	16.44	.....	29.42	.....	4.350	.....	4.11
October..	.....	16.37	.....	28.54	.....	4.350	.....	4.15
Nov.....	.....	16.40	.....	28.25	.....	4.350	.....	4.29
Dec.....	.....	16.31	.....	28.94	.....	4.350	.....	4.25
Year. ..	.....	16.19	.....	29.90	.....	4.37	.....	4.39

The prices given in the table for copper are the averages for electrolytic copper. The average price for Lake copper for the year 1900 was 16.52c.; for the month of January, 1901, it was 16.77c.; for February, 16 90c; for March, 16.94c; for April, 16.94c; for May, 16.91c.; for June, 16.90c; for July, 16.61c.

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars	$ 46	$ .49
Peruvian soles and Chilean pesos	.44	.46
Victoria sovereigns	4.86	4.88
Twenty francs	3.86	3.88
Twenty marks	4.76	4.85
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

The fact that about the worst is known of the corn crop damage, and the indications that the steel strike will be less extensive than had been expected, seem to have a favorable effect on general business conditions. The speculative markets are also stronger. In both cases the dulness of the vacation season is felt, of course; but not to as great an extent as might seem natural. Exchange is easier, and no gold exports are looked for.

Fluctuations in bar silver have been very slight during the past week, the quotation dropping off to 26¾d. in London and closing at 26 13/16d. The London market has been able to satisfy the Eastern demand under 27d. and rather freer selling from America caused the slight fall.

The statement of the United States Treasury on Wednesday, August 7th, shows balances in excess of outstanding certificates as below, compared with the corresponding day last week:

	Aug. 7.	Aug. 14.	Changes.
Gold	$102,436,748	$105,048,760	I. $2,612,012
Silver	26,209,202	26,321,058	D. 188,144
Legal tenders	13,302,374	13,715,266	I. 412,892
Treas. notes, etc..	136,662	100,090	D. 36,572
Totals	$142,085,986	$144,885,174	I. $2,799,188

Treasury deposits with national banks amount-

Imports and Exports of Metals.

Port.	Week, Aug. 14		Year 1901.	
	Expts.	Impts.	Expts.	Impts.
New York. (N. Y. Metal Exchange.)				
Aluminum.....long ton	.....	....	77	95
Antimony ore... " "	.....	85	...	806
" regulus.. " "	.....	10	19	691
Chrome ore . .. " "	.....	.....	.....	350
Copper, fine ... " "	425	200	37,564	11,393
" matte... " "	148	.....	5,964	50
" ore " "	.....	4,642	.....	29,157
" sulphate " "	20	.....	.....	.....
Iron ore " "	.....	3,500	.....	3.575
" pig, bar, rod " "	389	76	12,992	3,113
" plates, sheets " "	.....	35	641	126
Lead..... ... " "	1,220	700	17,327	32,815
Manganese, ore. " "	... .	109	100	7.076
Metals, old, scrap " "	.....	132	1.351	1,919
Composition... " "	48	18	3,770	518
Nails..... " "	72	.....	6,980	.....
Nickel ... " "	5	5	1,279	71
" ore, matte " "	.....	4,050		27,273
Pipe, iron & steel " "	51	.....	13,347	.....
Railr'd material. " "	271	109	14,905	1,708
Steel bars, plates " "	1,029	287	32,349	9,761
" rails. ..... " "	2,398	.....	65,021	... ...
" wire .... " "	95	.....	65,116	.....
Sulphur ore..... " "	.....	2,300	.....	.....
Tin .. " "	.....	100	230	17,491
" and black plates" "	.....	1,128	7	20,618
Zinc..... " "	6	5	586	862
" dross..... " "	66	.....	531	.....
" ashes, skim " "	.....	.....	807	....
" ore..... " "	.....	.....	13.871	.....
Baltimore. (Special Correspondence).				
Antimony.....long tons	.....	.....	.....	10
Chrome Ore..... " "	.....	.....	.....	6,536
Copper, fine..... " "	712	.....	5,199	4,361
Iron pig, bar, etc. " "	2	250	1,405	5,026
" ore..... " "	.....	9,9 0	.....	254.730
Manganese ore.. " "	.....	4,802	.....	54,932
Nails ..... " "	38	.....	414	.....
Pipe, iron & steel " "	309	.....	1,022	.....
Spiegeleisen..... " "	.....	50	.....	7,495
Steel, bars, etc.. " "	441	2	36,555	189
" wire ..... " "	41	.....	854	165
" rails..... " "	3,440	.....	71,206	.....
Tin..... " "	.....	.....	.....	175
" and blackplates" "	.....	13	.....	454
Philadelphia.				
Antimony.....long tons	.....	.....	.....	7
Chrome ore..... " "	.....	.....	.....	831
Copper, fine..... " "	.....	.....	715	...
" ore. .... " "	....	4.823	...	24,866
Iron, pig, bar.... " "	13	700	267	5, 79
" ore ... .. " "	10	4,000	210	172,815
" pipe .. .... " "	11	.....	1,932	.....
Lead..... " "	.....	10	200	10
Manganese ore.. " "	.....	.....	...	6,819
Metals, old..... " "	.....	.....	39	1,458
Nails ..... " "	.....	.....	112	... ...
Pipe, iron & steel " "	.....	.....	3,843	.....
Railroad material " "	.....	.....	557	.....
Steel, bars, etc.. " "	149	141	5,601	433
" rails ..... " "	.....	.....	9,011	.....
" wire ..... " "	.....	.....	395	.....
Spiegel & ferro.. " "	.....	106	.....	.....
Tin..... " "	.....	360	.....	360
" and black plates" "	.....	166	.	1,605
Zinc ore..... " "	.....	.....	2,064	.....
" dross ..... " "	19	.....	185	.....
" ash .... . " "	27	....	.....	.....

Total United States.

Articles.	June.		Year, 1901.	
	Expts.	Impts.	Expts.	Impts.
Antimony. .. Long tons	...	139	.....	761
" ore.... " "	.....	... ...	22	130
Copper, in all forms ... ... " "	9,842	6,731	48,027	59,818
Iron, pig & bar.. " "	3,7.6	8,139	57,234	26,751
" ore..... " "	6,659	92,924	12,898	368,613
Iron & steel plates " "	1,982	481	23,579	1,191
Iron & steel rails " "	31,515	12	200,295	467
" " wire " "	6,196	247	39.463	2,815
Lead, in all forms " "	7,444	5,483	51,209	56,084
Manganese ore and oxide..... " "	.....	13,394	.....	81,481
Nickel " & matte " "	165	.....	1,251	23,289
Nails, cut..... " "	759	.....	8,185	.....
" wire ..... " "	1,819	.....	11,378	.....
Quicksilver.... " "	13	.....	192	.....
Steel billets, rods, etc..... " "	1,154	2,664	32,630	12,251
Tin..... " "	37	3,112	1,605	18,194
" & black plates " "	21	3,651	498	25,069
Zinc..... " "	158	67	2,045	2:9
" ore .... " "	5,655		19.564	

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. a lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. a lb. Quicksilver, 7c. a lb. Spelter or zinc, 1½c. a lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

ed to $102,986,999, showing a decrease of $484,553 from last week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending August 3d, give the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts.	$746,685,300	$808,046,200	$886,455,600
Deposits	849,918,500	897,409,400	965,381,000
Circulation	13,902,700	27,411,300	30,553,200
Specie	171,963,600	177,029,800	183,095,500
Legal tenders	54,911,400	75,448,500	79,202,700
Total reserve	$226,875,000	$252,478,300	$262,298,200
Legal requirements..	212,479,625	224,352,350	241,345,250
Balance, surplus	$14,395,375	$28,125,950	$20,952,950

Changes for the week this year were increases of $7,948,700 in loans, $2,549,800 in specie, and $9,468,800 in deposits; decreases of $1,212,400 in surplus reserve, $1,395,000 in legal tenders and $19,600 in circulation.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars and comparison is made with the holdings at the corresponding date last year:.

Banks.	—1900.— Gold.	Silver.	—1901.— Gold.	Silver.
N. Y. Ass'd.	$177,029,800	.....	$183,095,500	.....
England	152,144,525	.....	182,650,565	.....
France	446,447,440	$227,517,470	480,444,735	$224,015,665
Germany	141,550,000	72,915,000	158,005,000	81,395,000
Aus.-Hun.	188,640,000	49,425,000	195,790,000	55,565,000
Spain	68,445,000	84,115,000	70,015,000	84,735,000
Neth'l'ds	24,350,000	29,510,000	31,253,000	27,973,500
Belgium	14,700,000	7,350,000	15,480,000	7,740,000
Italy	77,315,000	8,155,000	79,345,000	9,661,500
Russia	397,175,000	38,060,000	351,110,000	37,295,000

The returns of the Associated Banks of New York are of date August 10th, and the others August 8th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

Exports of merchandise from the United States in July are reported by the Bureau of Statistics of the Treasury Department at $109,031,158, being $6,256,895 more than in June, and $8,578,351 more than in July, 1900. For the seven months ending July 31st the statement is as follows:

	1900.	1901.
Exports	$812,486,551	$830,883,816
Imports	503,078,345	506,337,191
Excess, exports	$309,408,206	$324,546,625
Add excess of exports, silver		14,920,071
Add excess of exports, gold		14,690,029
Apparent balance, exports		$354,156,715

The gold and silver movement in detail will be found in the usual place, at the head of this column.

Specie shipments from San Francisco by water in July included $660,505 silver and $292,622 gold. For the seven months ending July 31st the statement is as follows:

	1900.	1901.	Changes.
Silver bars	$2,797,142	$1,936,294	D. $860,848
Silver coin	301,890	154,306	D. 147,584
Mexican dollars	3,785,973	1,130,852	D. 2,655,121
S. American coin	35,827	5,765	D. 30,062
Total silver	$6,920,832	$3,227,217	D. $3,693,615
Gold bars and dust	$2,738	$202,115	I. $199,377
Gold coin	3,667,778	1,068,269	D. 2,599,509
Total gold	$3,670,516	$1,270,384	D. $2,400,132
Totals	$10,591,348	$4,497,601	D. $6,093,747

The large decreases were in shipments of gold coin to New York, and of silver to China. The heavy falling off in Mexican dollars is noticeable. They are still scarce. The destination of the shipments this year was as follows: China, $3,162,976; Japan, $2,280; India, $30,000; Central America, $720; Mexico, $100,000; New York, $1,201,625.

Shipments of silver from London to the East for the year up to August 1st, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India	£3,388,252	£4,575,210	I. £1,186,958
China	434,464	376,008	D. 58,456
The Straits	294,173	79,976	D. 214,197
Totals	£4,116,889	£5,031,194	I. £914,305

Exports for the week this year were £60,000 to India and £36,883 to China; a total of £96,883. Imports included £178,000 from New York, £17,000 from the West Indies and £5,000 from Australia; a total of £200,000.

Indian exchange is a little stronger and there has been some demand for Council bills in London at 15.91d. per rupee. The Indian Government has ordered £1,000,000 in gold remitted from India to London.

Other Metals.

Daily Prices of Metals in New York.

August.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. Pence.	Copper. Lake. cts. ₱ lb.	Copper. Electrolytic ₱ lb.	Copper. London £ ₱ ton.	Tin. cts. ₱ lb.	Lead cts. ₱ lb.	Spelter. N. Y. cts. ₱ lb.	Spelter. St. L. cts. ₱ lb.
10	4.87¾	58⅜	26⅞	16½	16¼	....	27½	4.32½@4.37½	3.97½	3.82½
12	4.87¾	58⅛	26⅛	16⅛	16¼	65	27⅛	4.32½@4.37½	4.00	3.85
13	4.87¾	58⅛	26¾	16⅛	16¼	65 7/16	27¼	4.32½@4.37½	4.00	3.85
14	4.87¾	58⅛	26⅛	16⅛	16¼	65 9/16	26¾	4.32½@4.37½	4.00	3.85
15	4.87¾	58⅛	26⅛	16⅛	16¼	65 7/16	26⅛	4.32½@4.37½	4.00	3.85
16	4.87¾	58¼	26⅞	16½	16¼	65 9/16	26½	4.32½@4.37½	4.00	3.82½@3.85

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market is very quiet. Consumers generally are holding off with purchases in the hope that later on they will secure supplies at less money. We do not, however, find any pressure to sell, the large interests not shading their prices. Consumption in this country is very heavy and the time should now be approaching when manufacturers will have worked up their stocks.

The European market for refined copper has been quiet, buyers being affected by the decline in standard copper in London, but the prices for refined remain unchanged.

We quote Lake copper, 16½c.; electrolytic in cakes, bars or ingots, 16¼c.; cathodes, 16c.; casting copper, 15⅞c.

The London market, which closed last week at £66 2s. 6d. for spot and £66 10s. for three months, opened at £66 for spot and £66 8s. 9d. for three months. It was 6s. 3d. lower on Tuesday, but reacted 2s. 6d. on Wednesday, closing at £65 10s.@£65 12s. 6d. for spot and 7s. 6d. higher for three months.

Refined and manufactured sorts we quote: English tough, £72@£72 10s.; best selected, £73@£73 10s.; strong sheets, £83; India sheets, £79; yellow metal, 6½d.

Statistics for the first half of the month show a decrease in visible supplies of 1,200 tons.

Imports of copper in all forms into Germany in the six months ending June 30th were equivalent to 33,014 metric tons of fine copper. Exports were 4,693 tons, showing an apparent consumption of 28,321 tons foreign copper. This compares with 39,696 tons in the first half of 1900, showing a decrease of 11,375 tons this year.

Copper production, as reported by Mr. John Stanton, who acts as statistician for the producing companies, was as follows for July and the seven months ending July 31st, stated in long tons (2,240 lbs.) of fine copper:

	—July.—		7 months.	
U. S., reporting mines	19,612	18,585	133,789	131,379
U. S., outside sources	3,400	3,400	23,800	24,000
Total, U. S.	23,012	21,985	157,589	155,379
Foreign, reporting mines.	7,443	9,254	51,496	47,645
Totals	30,455	31,239	209,085	203,851
Exports, U. S.	11,636	6,824	101,865	54,851

The United States production continues to show a slight decrease, this year's total for the seven months being less than that of last year by 2,210 tons, or 1.4%. The foreign reporting mines show for the same period a decrease of 3,841 tons, or 7.3%. At the same time there was a decrease of 47,014 tons, or 46.1%, in United States exports.

Chilean Copper Market.—Messrs. Jackson Brothers write from Valparaiso that there has been a persistent fall in the market, followed by a slight reaction. Quotations were for bar copper, cash on shore, $81.52½ per metric quintal; matte, 50%, f. o. b., $36.56; copper ores, 10%, f. o. b. $4.58. Sales for the two weeks ending July 13th included 7,792 quintals bar copper and one lot of matte.

Tin.—There has been a very active market this week. In consequence of the premium which has ruled for spot tin, consumers had deferred their purchases and this week found them quite bare of supplies, and thus the higher London quotations early in the week brought a great many orders into the market. The supplies of spot tin are small and concentrated in a few hands and it is likely that the premium for spot will continue for some time to come. The arrivals toward the end of the month will be rather heavy, but it is expected that the tin will go immediately into consumption. At the close we quote spot at 26½c.; September delivery at 25½c.; October delivery at 25¼c.

The London market, which closed last week at £115 10s. for spot and £112 5s. for three months, opened at £117 for spot and £113 for three months. On Wednesday, the market declined to £115 5s. for spot and £111 for three months; on Thursday to £114 10s. for spot and £110 7s. 6d. for three months, closing at £115 5s.@£115 7s. 6d. for spot, and £4 5s. lower for three months.

Spelter.—The market is firm. There is a good demand, which, however, is freely met by the smelters. We quote the market 3.85c. St. Louis and 4c. New York.

The foreign market is somewhat better, good ordinaries being quoted £16 12s. 6d. and specials 5s. higher.

Silesian Spelter Market.—Herr Paul Speier writes from Breslau, under date of July 29th, that the market is again somewhat weaker, prices showing a drop during July of 1.50 marks. The current quotation is 33@34 marks per 100 kgs., f. o. b. cars at Breslau. This is equal to an average of 3.62c. per pound. The average price at works in Upper Silesia for the first quarter of the current year was 32 marks per 100 kgs.; for the second quarter, 31 marks. Imports into and exports from Germany for the six months ending June 30th were, in metric tons:

	Imports. 1900.	Imports. 1901.	Exports. 1900.	Exports. 1901.
Spelter, pigs and bars	21,279	18,129	47,726	39,719
Zinc sheets	185	294	16,550	13,022
Scrap zinc	1,480	825	1,154	1,198
Zinc white	4,980	3,698	14,456	13,849
Lithopone	19	31	5,567	6,371
Zinc ore	67,020	81,858	39,816	38,959

The takers of exported spelter were: Austria-Hungary, 14,175 tons; Great Britain, 9,030 tons; Russia, 8,693 tons; Italy, 2,153 tons; Holland, 1,539 tons; Sweden, 971 tons; Japan, 958 tons; France, 804 tons.

Lead.—The market is firm and a good business has been done. Prices are unchanged at 4.27½@4.32½c. St. Louis and 4.32½@4.37½c. New York.

Spanish lead is quoted £11 10s. and English £11 12s. 6d. in London.

Antimony is unchanged. Cookson's at 10@10⅜c.; Hallett's, 8⅝c.; Hungarian, Italian, Japanese and U. S. Star at 8½c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of order.

Platinum.—Consumption continues good and prices are strong. Ingot platinum in large lots now commands $20.50 per ounce in New York. In London prices are about on a parity with the New York rate.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 80c. per grain.

Quicksilver.—While the nominal quotation is still $51 in New York, the metal can be had for $47.85@$50 per flask in large quantities, with a slightly higher rate named for small orders, San Francisco prices are $46@$47 per flask for domestic orders and $42@$43 for export. The London price is £9 per flask, with the same figure quoted by second hands.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	33@37c.	Ferro-Tungsten (37%)	52c.
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	42c. up	Manganese (over 99%)	$1.00
Alum.-bronze	20@23c.	Mangan'e Cop. (20% Mn)	32c.
Nickel-alum	33@39c.	Mangan'e Cop. (30% Mn)	38c.
Bismuth	$2.00	Molybdenum (Best)	$1.75
Chromium (over 99%)	1.00	Phosphorus	50c.
Copper, red oxide	50c.	American	70c.
Ferro-Molyb'um (50%)	$1.25	Sodium, metal	65c.
Ferro-Titanium (10%)	90c.	Tungsten (Best)	69c.
Ferro Titanium (20%)	$1.00		

Variations in prices depend chiefly on the size of the order.

LATE NEWS

The latest news on the steel strike is that the members of the Amalgamated Association lodges at Joliet, Ill., have voted to strike. This is a break in the ranks of the Western members, who have held back from the movement heretofore.

Rowan County—North Carolina.

(From Our Special Correspondent.)

Whitney Reduction Company.—This company owns a large mine adjoining the Union Copper Mines and has under way the most extensive development work ever undertaken in the State. One shaft is 500 ft. deep and still sinking. At this level it has encountered the richest gold ore yet found on the property. The company is said to have many thousands of tons in sight and is developing with the view of supplying a 100-stamp mill which it proposes to erect on the mill site, where 20,000 H. P. is available for transmission to towns and cities in the vicinity. This is one of the strongest corporations that has ever undertaken a large enterprise in this State. Geo. I. Whitney, of Pittsburg, Pa., and associates are at the back of the enterprise. Col. E. B. C. Hambley, of Gold Hill, is manager.

Oddy.—This old gold mine is being opened by R. D. Curd and associates of Chicago, Ill. The prospect is showing a quantity of fair-grade ore.

SLATE TRADE REVIEW.

New York. Aug. 16.

The list of prices per square for No. 1 slate, standard brand, f. o. b. at quarries in car-load lots, is given below:

Size, inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n or Jackson Bangor.	Chap'n Keye'ne	Peach Bottom.	Sea Gr'n	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	. .	5.10	3.00	..	.....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	....	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	.. .	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	. .	5.25	3.00	....	.....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	16.50
18 x 12	6.80	3.75	.....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	....	....	....	.....	....	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	.....	3.00	.....	.....	2.90	3.50	.....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4 25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	....	....	.....	....	....	2.70	3 75	10.50
14 x 8	6 60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.. .	....	.. .	...	2.50	3.25	....
12 x 9	5.60	.....	.....	....	... .	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	.....	4 85	2.30	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3 25	....	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof.

Domestic business continues good and prices are generally being maintained. Less is heard of export trade, and there is not much activity in that line.

MINING STOCKS.

Complete quotations will be found on page 216, 217 and 218 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
New York.	Spokane.	Mexico.
Philadelphia.	St. Louis.	Paris.
	Toronto.	

New York. Aug. 16.

Speculation has not been particularly active. Even in the prominent industrials business was not heavy, though prices were generally firm. United States Steel, which has been attracting much attention and which has been fluctuating on account of the trouble with its workmen, gained strength on the prospect that the strike will be a short one. The closing quotations were 44 for the common stock and 93 for the preferred. Standard Oil closed at 775.

In the special mining stocks very little was done. The Comstocks are suffering from a new crop of assessments, and quotations were few. Consolidated California & Virginia sold at $2.05, with Best & Belcher at 17c.; while Ophir brought 90c.

A sale of Brunswick, of California, was made at 10c.

In the Colorado stocks not much was doing. Sales were made of Gold Dollar at 48@49c.; Mollie Gibson at 38c.; Gold Dollar at 20, seller 10; and Argentum Juniata at 12c.

In the coppers there was a little business done, chiefly in Amalgamated. That stock was quoted at $112¾@$113, while Anaconda sold at $44¼. Amalgamated is still said to be pegged at 112, but it has not touched that. Many people anticipate higher prices later. British Columbia Copper sold at $14@$14¼, but the transactions were small. Union, of North Caro ina, was quoted around $5, with very small sales. Tennessee Copper was $17@$17½.

There were some dealings in American Smelting and Refining, the common stock being quoted at 51½@51¾, with the preferred at 100@100½.

Auction sales included 2 shares Lykens Valley Railroad and Coal Company at $6 a share.

Boston. Aug. 15.

(From Our Special Correspondent.)

The Boston market is still dull and narrow. What interest is shown is rather in the industrials than in mining stocks. United States Steel attracts the most attention.

Calumet & Hecla got down to $700 and hung between that point and $705 for the rest of the week. In the other Lake coppers but little was done, with two or three exceptions. Baltic was a little harder, at $51½, while Trimountain also brought $51½. There was some dealing in Copper Range at $76@$76½.

In the outside coppers business was also quiet. The only stock showing any life was Old Dominion, which sold up to $30. Utah Consolidated was quoted at $29, and for British Columbia Copper $16 was asked.

The gold and silver stocks were very quiet. A small sale of Daly West was recorded at $40.

Business in the Amalgamated group showed no special features. Amalgamated itself was quoted between $113 and $114, but on very moderate sales. Our effervescent Lawson is reported as saying that Amalgamated will sell at $180 this fall. This may or may not be, but people do not seem to care much for the prediction just now.

Anaconda was quoted at $44½; Parrot at $50½; Arcadian at $15½. It must be said that the business in these was largely inside trading.

The feature of the early part of the week was a decline in Calumet & Hecla, which went off on Monday to $700 a share, rallying to $702 at the close. The basis of the decline was the recent report. Just how far this bear movement has anything behind it and how much actual stock was sold on the decline is not easy to determine. There are reports that the Amalgamated people engineered the break; but it is hard to believe that they can possibly expect to scare out any large holdings, or to buy any important quantity of the stock. At the same time it is quite possible that they might get enough to enable them to make trouble if they saw fit to do so. The supposition is only talk, however, for no one seems to be in a position to speak positively on the matter.

The Boston Stock Exchange has admitted for quotation on the unlisted sheet Bingham Consolidated Mining and Smelting Company. The stock is non-assessable. The company was incorporated under the laws of the State of Maine, April 24th, 1901. The authorized capital stock is 200,000 shares, the amount listed being 150,000 shares, and 50,000 shares are held in the treasury for future uses of the company. The par value of the shares is $50. The officers are: Donald M. Belches, president; Herbert W. Wesson, secretary, and O. E. Weller, treasurer. The directors are: Donald M. Belches, H. W. Wesson, Frank E. Altmiller, William J. Freeman, Charles J. Weir, William Bayly, Larkin T. Trull, Edward M. Gallagher, W. S. McCornick, Peter L. Kimberly and Edward L. Geary. The principal office of the company is at 60 State Street, Boston; the transfer office, the Federal Trust Company, Boston; and the place of registration, the Massachusetts National Bank, of Boston.

Colorado Springs. Aug. 10.

(From Our Special Correspondent.)

The stock market is stronger than last week. During the entire week it has shown a marked upward tendency, not only in the mines, but in the other and lower-priced stocks. The business during the week centered in the stocks, which represent growing mines, especially those which are nearing the dividend stage, like El Paso and Gold Dollar, while the mines come in for a good amount of trading and prices almost without exception ruled higher than the preceding week. The trading is mostly the spirit of investment and not speculation, which is noticeable. Speculation is at a low ebb, and the local brokers are glad when it is investment, not speculation, that is supporting the stock market. It is generally thought by the brokers and others that the prices of stock on the market have about reached their lowest point, and this seems to be the reason for investment and not speculation.

The principal features for the week are Argentum, Juanita, Doctor-Jack Pot, Elkton, El Paso, Gold Dollar, Isabella and Pointer in the mines; Bonnie Nell, Cripple Creek-Columbia, Central, Eclipse, Mollie Dwyer and Sedan in the preferred projects; Zoe in the prospects; Acacia and Golden Age in the unclassified.

Argentum-Juniata opened at 14½c. bid and declined to 12½c.; this stock is active, but showed a downward tendency. Doctor-Jack Pot opened at 60c. bid and advanced 2½c., but declined and sold at 61½c. Elkton has shown much activity, opening at 177½c. and advancing to 180c., but declined a trifle to 177c. El Paso opened at 47½c. and showed an upward tendency during the week, advancing to 49¾c., with some sales at 50c. Gold Dollar has been unusually active this week with heavy trading, opening at 16⅝c. and advancing to 17¾c. Isabella opened at 45½c. at the beginning of the week and advanced to 47½c. under heavy trading. Pointer showed a tendency to hold strong during the first of the week, but declined toward the last of the week; it opened at 8½c. and declined to 8⅛c. Bonnie Nell has shown unusual activity, opening at 9½c. and closing at 9⅜c. Cripple Creek-Columbia has advanced more than any other stock this week, opening at 23½c. and advancing to 25c., with some sales at 25¼c., buyer 30. Central opened up at 7c. and closed at 7½c. bid and 7⅛c. asked, having advanced ½c. during the week and showing much activity. Eclipse opened at 12⅝c. and closed at 12¼c., declining ¼ of a cent under heavy trading. Mollie Dwyer opened at 7¼c. and declined to 6¾c., then advanced to 6⅞c., with much trading. Sedan opened at 7¼c., then declined to 6¾c. and advanced to 7c., with fairly good trading. Zoe has shown an upward tendency, opening at 2¾c. and closing at 3c. bid, with 3⅛c. asked, under light trading. Acacia has shown much activity this week, opening at 15¾c. and advancing to 16⅝c., but declined to 16c. at the last of the week, with much trading. Golden Age has been rather active this week, opening at 1⅞c. bid and 2c. asked, advancing to 2⅛c., the sales being rather light.

The total amount of sales during the week was 1,968,581 shares; which is much heavier than last week, with brighter prospects for the coming week.

San Francisco. Aug. 10.

(From Our Special Correspondent.)

There was no special incident in the market this week. Business was about on the level of the past two or three weeks, but prices were not strong. On the other hand, there was no pressure to sell and holders did not seem anxious to part with shares.

Some quotations noted are: Consolidated California & Virginia, $1.95; Confidence, $1.30; Ophir, 67c.; Challenge, 35c.; Caledonia, 30c.; Hale & Norcross, 25@27c.; Gould & Curry, 14@15c. Standard Consolidated was $3.65 asked, with no sales.

There has been a notable revival of interest in Nevada mines, and many new companies are operating in that State, while a number of old mines are being reopened. If we could have some of these stocks put on the Exchange here, there might be some life in business which it does not now possess. There is little hope for any such change under present conditions.

The Dublin Gold Mining Company of Nevada County, Cal., has levied an assessment of 1c. per share, delinquent August 31st.

On the Producers' Oil Exchange business is still dull. This week prices have been rather lower and the demand for stocks only moderate. Some quotations noted are: San Joaquin Oil and Development, $7.75@$8; Peerless, $6; Kern, $5.25; Four Oil, 38c.; Giant, 30c.; California Standard, 23c.; Junction Oil, 19c.; Lion, 9c. The largest dealings were in California Standard, Junction and Lion.

No more reports need be expected from the San Francisco Oil Exchange.

Nothing more is heard at present of the proposed combination of producing oil companies.

London. Aug. 4.

(From Our Special Correspondent.)

The London mining market continues to be very dull, and prices all round have been falling slightly, owing to the fact that several speculators have been closing their accounts and getting out of the market altogether. West Africans are now at a low ebb, though I hear that one or two influential South African houses are intending to try their hands at speculation in this section. I don't know what properties they intend to introduce, but it is more probable that they will not introduce any at all and confine themselves to creating an artificial market in a certain number of shares that are on the town already. It is not likely, however, that they will be able to effect much in this way. The South African market has been stirred up a little by persistent rumors of an immediate pacification of the Transvaal. Such rumors are getting a little stale by now, so that these particular ones had not much effect. The West Australian market is not fulfilling the prophesies of its backers as regards the general revival that was promised. The production of the leading mines is in a more satisfactory condition now than it has ever been and the management has in many cases been much improved. The sulphide problem has been studied out and suitable processes devised. There is therefore every reason for hoping that a little life might be infused into the share market, but the public do not exhibit the least desire to go in. The recent collapses after the extraordinary inflation of two and three years ago are still present in the minds of speculators, and the quotations of the best shares are still as high as can reasonably be expected when the real merits of the mines are considered. Besides the mines are now regular producers and there are no mysterious "prospects," on which most speculation is founded. Altogether it does not seem as if much booming would be done in this section.

A well-known promoting company that has fallen on evil days is the Exploration Company. This company used to have a very high position in London in its early days, when Hamilton Smith's successes and the financial support of the Rothschilds were its sustaining features. Some excellent properties were introduced and immense sums of money were made on the rise of South Africans five and six years ago. Toward the latter end of Hamilton Smith's connection with the company one or two companies were floated that did not bring much credit to those connected with them, such as the Ashcroft Sulphide Company and the Grand Central Mine of Mexico. Since he severed his connection the company has not done much good. It certainly made money by helping to corner Horatio Bottomley, but it lost in similar operations against Whitaker Wright and has done very badly in its speculations in the shares of the French Electric Traction Company. The shares in this latter company were introduced at a high price and they have gradually fallen away to an almost nominal figure, so that the assets of the Exploration Company have seriously diminished. The leaders of the company are gradually deserting it and several English directors have resigned recently. The control is passing more and more into the hands of Frenchmen and probably a majority of the shares are held in France. The English groups who used to support it have for some time gradually been transferring their influence to other companies and it would not be surprising to hear that the Exploration Company is to be

liquidated and the assets transferred to the French company that works with it.

I have from time to time mentioned the company, the Siberian Gold-fields Development Company, vendors' shares in which have been sold extensively before the company has been able to obtain the properties that it was formed to acquire. Desperate efforts are still being made by the promoters—of whom Mr. Hooley is the real chief, though his name does not appear—to obtain the properties somehow or other and quite a number of schemes are being put forward. It is alleged that in these new schemes all the features objectionable to the Russian Government have been eliminated and the promoters go so far as to say that Mr. Hooley and his crowd are not now interested in the schemes. These allegations are obviously absurd, but I suppose they would not be put forward unless the promoters thought somebody would believe it. It is incredible that the Russian Government will be taken in by these subterfuges and eventually the promoters will have a hot time of it. It is an extraordinary thing that it should be legal for promoters to sell vendors' shares in a company that owns nothing. If the shareholders had any leader they should be able to prosecute the vendors for obtaining money under false pretenses.

A belated West African issue has made its appearance this week. This is the King Prempeh Treasure Mines, Limited, which is being floated with a capital of £350,000 to acquire some properties 18 miles west of Kumasi. The information contained in the prospectus is very general in character, but the most interesting statement of all is that the samples of ore brought over by the vendor's expert are so rich that the directors hesitate to give the assay results. Presumably the results would not be greater than 30,000 oz. per ton, though I have seen such figures quoted in a report before now. The proposition is, however, of no interest from a mining point of view, but it is sufficient for the speculative underwriter and broker.

Paris. Aug. 4.

(From Our Special Correspondent.)

The mining stock market is still quiet, and speculation is concerning itself very little, except in one or two directions.

The Russian iron and steel stocks continue very much agitated, showing further important declines. The immediate future of these companies is not at all encouraging, though I do not doubt that in the end the necessary growth of the Empire will impress upon them a substantial value. But speculators and many investors do not want to wait for a comparatively distant future.

The copper stocks continue to be well supported, notwithstanding the lower prices for copper in London. These, by the way, are no longer arbiters of the market, and our buyers are learning this by some not altogether pleasant experiences.

The metallurgical stocks are again weak and somewhat uncertain.

A sensation has been caused in industrial circles by the announcement that the Fourchambault Steel Works, which have been carried on for nearly 80 years, will be closed as soon as the orders in hand have been executed. The motives for this step are that the Commentry coal mines, in the neighborhood of the works, and belonging to the company, are nearly exhausted, and that iron works in the center of France cannot compete with those in the north and east, which are more advantageously situated for their supplies of coal, and for their railroad communications. The Fourchambault Works have employed 800 men, but the number has become reduced to 500, a great many of whom are owners of the houses in which they live. They will be dismissed gradually as the work ceases. Those who have been long in the service of the company will receive pensions, others an indemnity, and employment will be found for some in the Decazeville Works, which belong to the same company.

The governors of the Paris Bourse have adopted a new scale of commissions, to be allowed by the privileged agents de change to coulissiers who introduce business to the former. The rates are 40% of the brokerage for operations for the account, 20% for continuations, and 10% for orders for money. The commission is increased to 80% for Servian and Turkish bonds, when the operation comprises a purchase and a sale, but the favor is limited to inscribed members of the coulisse, and they are prohibited from making any reduction in the brokerage to their clients.

The movement of gold and silver in France for the six months ending June 30th is reported by the Ministry of Commerce as below:

	Imports, Francs.	Exports, Francs.	Excess, Francs.
Gold:			
1901	176,729,000	28,943,000	Imp. 147,784,000
1900	177,170,000	32,942,000	Imp. 144,228,000
Silver:			
1901	51,828,000	78,361,000	Exp. 26,533,000
1900	68,338,000	98,715,000	Exp. 30,377,000

Imports of copper and nickel coins, rated at their face or coinage value, were 51,000 fr. this year and 33,000 fr. in 1900. Exports of these coins were 162,000 fr. this year and 173,000 fr. last year.

It is reported that another issue of Russian 4% bonds will soon be made in Paris. The recent loan was issued at 98½, but the price has since risen to 102. The time is therefore considered favorable for a new issue.

I have heretofore referred to the extraordinary abundance of money in France at present and the consequent search for new investments. One would suppose that this abundance would stimulate new enterprises at home; but such has not been the case. That some of this money should be put into Russian securities is to be expected, and the loan will probably be placed without difficulty. Russian securities have long been favorites here and the amount held in France is enormous, but people seem willing to take more.

The fact is French money is now going abroad on a very large scale. To say nothing of loans in London and investments in British securities, which are larger than ever before, there has been a great deal put into German securities, especially industrials, and more is still going in spite of the depression in that country. There has also been recently some buying of Italian bonds, which have never been favorites here. Very large investments have been made through Brussels, not always with favorable results. That city is the headquarters for doubtful enterprises and inflated capital stocks, and one must be very careful in accepting enterprises which have it as their center.

It is strange that while looking abroad for uses for their money our people do not take advantage of the opportunities offered in the United States. They are accustomed to working on certain narrow lines, however, and it is very hard to tempt them outside. Then also the general belief that you are responsible for the heavy losses of two years ago in Spanish securities still prevails. I do not know when it will disappear—probably not for a long time; and your people are still looked at in an unfriendly way.

Azote.

ANNUAL MEETINGS.

Name of Co.	L'cation.	Date.	Place of Meeting.
Am. Smelting & Refining		Sept. 11	Jersey City, N. J.
Calumet & Hecla.	Mich.	Aug. 21	Boston Mass.
Republic Ir. & St.		Sept. 11	Jersey City, N. J.

ASSESSMENTS.

Name of Company.	Location.	No	Delinq.	Sale.	Amt.
Bear Flag Oil	Cal.		Aug. 12		.02
Belcher	Nev.	70	Sept. 4	Sept. 25	.10
Best & Belcher	Nev.	74	Sept. 6	Sept. 27	.15
Con. St. Gothard	Cal.	19	Aug. 12	Sept. 2	.10
Dublin Gold	Cal.		Aug. 31		.01
Eureka Con. Drift	Cal	31	Aug. 15	Sept. 2	.00½
Hale & Norcross	Nev.	7	Aug. 5	Aug. 29	.10
Jenny Lind	Cal.		Aug. 27		.02
Joe Bowers	Utah	4	July 29	Aug 17	.01
Junction Oil	Cal		Aug. 13		.10
Justice	Nev.	72	July 27	Aug. 17	.05
Kings Co. Oil	Cal.	3	Aug. 28	Sept. 18	.02
Mariposa Con'l & Mg.	Cal	23	Aug. 10	Sept. 2	10.00
Martha Washington	Utah	7	Aug. 7	Aug. 27	.03
Mexican	Nev.	68	Sept. 5	Sept. 28	.10
Ophir	Nev.	81	Aug. 13	Sept 2	.15
R. G. W.	Utah	10	July 31	Aug. 19	.00½
Sailor Con	Cal	11	Aug. 5	Aug 26	.01
Shower Con	Utah	4	Aug. 31	Sept. 1	.03
Sierra Nevada	Nev.	123	Sept. 11	Sept. 30	.10
Skagit Cumberland C	W'sh	9	Aug. 19	Sept. 23	.10
Tetro	Utah	20	Aug. 7	Aug. 31	.01
Utah Con	Utah	37	Aug. 15	Sept 5	.05
Yellow Jacket	Nev.	8	July 23	Aug. 23	.10
Yuba Con	Cal.	2	July 30	Aug 19	.03

DIVIDENDS.

Name of Company.	Latest Dividend. Date.	Per share.	Total.	Total to date.
American Coal	Sept. 3	1.25	75,000	1,132,503
†Boston & Mont	Aug. 20	5.00	750,000	25,475,000
Boston & Mont. extra	Aug. 20	5.00	750,000	
§Colo. Fuel & Iron, pf.	Aug. 21	4.00	80,000	1,320,000
Homestake	Aug. 26	.50	105,000	10,243,750
Ontario	Sept. 3	.10	15,000	14,677,500
Standard Con., Cal.	Aug 21	.10	17,839	4,017,669
Standard Oil Co.	Sept. 15	8.00	8,000,000	112,625,000
*U. S. Marble, Wash.	Oct. 15	.03¾	15,000	43,750
U. S Steel Corp., com.	Sept. 14	1.00	5,064,734	5,064,734

*Monthly. †Quarterly. §Semi-Annual.

STOCK QUOTATIONS.

PHILADELPHIA, PA. §

Name of Company.	L'cation.	Par Val.	Aug. 8. H.	Aug. 8. L.	Aug. 9. H.	Aug. 9. L.	Aug. 10. H.	Aug. 10. L.	Aug. 12. H.	Aug. 12. L.	Aug. 13. H.	Aug. 13. L.	Aug. 14. H.	Aug. 14. L.	Sales
Am. Alkali		$50											.63		200
Am. Cement		10							6 75	6.63					205
Bethlehem Iron	Pa.	50	61.75	61.50	61.75				61.63	61.38			61.50	61.25	99
Bethlehem Steel	"	50	25.00								23.00		23.00		1,900
Cambria Iron	"	50			35.00						48.00				15
Cambria Steel	"	50									22.88	22.75			300
Susq. I. & S.	"	10	2.00	1.88	1.88	1.75	1.88	1.75	1.75				1.75	1.63	6,641
United Gas I.	"	50			1.15	114¼			115				115		878

Total shares sold, 10,188. § Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

SALT LAKE CITY, UTAH. Aug. 10.

Stocks.	Shares.	Par val.	Bid.	Asked.	Stocks.	Shares.	Par val.	Bid.	Asked.
Ajax	300,000	$10	$1.46	$1.46½	Mammoth	400,000	$25	$2.25	$2.27½
Albion					May Day	400,000	¾	1.55	1.55
Alice	400,000	25	.40		Northern Light	400,000	5	.03	.03½
Anchor	150 000	10	2.40	3.12½	Ontario	150,000	100	8.70	9.00
Ben Butler	500 000	10	.20½	.20¾	Sacramento	1,000,000	5	.26¼	.28
Bullion-Beck & Ch.	100,000	10			Shower Con	400,000	5		
Centennial Eureka	200,000	25	25.00		Silver King	150,000	20		
Con. Mercur	1,000,000	5	2.75	2.85	Silver Shield			.01½	.02½
Dalton	500,000	1	.02½	.03	Star Consolidated	500,000	1		
Daly	150,000	20	2.36	2.42½	Sunbeam	250,000	1	.61	.71
Daly-West	150,000	20	38.30	39.75	Swansea	100,000	5	2.35	
Dexter	200,000	5	.85	.85¾	South Swansea	150,000	1	.46½	.45
Eagle & Blue Bell	250,000	1	.99	1.01	Tesora	400,000	1	90	96½
Galena	100,000	10	.19		Tetro	300,000	1	.20	.20¾
Grand Central	250,000	1	4.00	5.00	Uncle Sam Con	500,000	1	1.94½	1.95
Homestake	400,000	1			Utah	100,000	1	.63	.63½
Horn Silver	400,000	25	3.50		Valeo	300,000	1	.11	.25
Joe Bowers	400,000	1	.05½	.06	Yankee Con	250,000	0.10		5.05
Lower Mammoth	150,000	1	3.65	3.80					

ST. LOUIS, MO.* Aug. 5.

Name.	Shares.	Par	Bid.	Ask.	Name.	Shares.	Par	Bid.	Ask.
Am.-Nettie, Colo	300,000	$10	$1.05	$1.07	Doe Run Lead, Mo	10,000	$100	$125.00	$130.00
Catherine Lead, Mo	50,000	10	3.50	4.00	Granite Bimetallic, Mt.	1000,000	10	1.75	1.90
Central Lead, Mo	10,000	100	130.00	140.00	Kan. & Tex. Coal, Mo.	25,000	100	48.00	51.00
Columbia Lead, Mo	50,000	10	13.00	13.50	Renault Lead, Mo	30,000	10	9.50	11.00
Con. Coal, Ill	50 0.0	100	19.00	21.00	St. Joe Lead, Mo	300.000	10	14.50	16.50

* From our special correspondent.

TORONTO, ONT.

Name of Company.	Par val.	Aug. 6. H.	Aug. 6. L.	Aug. 7. H.	Aug. 7. L.	Aug. 8. H.	Aug. 8. L.	Aug. 9. H.	Aug. 9. L.	Aug. 10. H.	Aug. 10. L.	Aug. 12. H.	Aug. 12. L.	Sales
Ontario:														
Golden Star	1	.07½	.06½	.07½	.06¾	.07¾	.07	.07½	.06½			.07¼	.06½	3,500
Ham Reef	1													
British Col.:														
Cariboo MK	1	.25½	.22½	.25½	.25	.25	.24¼	.26½	.24			.28	.23½	2,500
Center Star	1	.33	.29½	.33	.31½	.34½	.32½	.25	.30½			.36	.33	
Crow's N. C.	25	78.00	70.00	78.00	76.00	80.00	75.00	80.00	75.00			85.00	75.00	
Deer Trail	1	.03¾	.03	.03	.02¾	.03	.02½	.02¾	.02½			.03	.02½	5,000
Fairview	1													
Mont & Lon	0.24													
Morrison	1	.05	.02	.05	.02	.05	.02	.05	.02			.05	.02½	
Noble Five	1	.09½	.08¼	.10¼	.09	.10	.09	.10	.08½			.10	.08	8,000
North Star	1	.60	.54	.60	.55	.59	.55	.57	.53			.60	.55	
Payne	1	.16	.12	.16	.14½	.16	.13	.16½	.13½			.16½	.15	2,000
Rambler	1	.50	.45	.47	.44	.47	.40	.46	.40			.46	.43	2,000
Republic	1	.05	.03	.04¾	.03	.05	.03	.04	.03			.04	.02½	
Virtue	1													
War Eagle	1	.15	.12	.15	.10	.15	.10	.15	.12			.15	.12	
Wonderful	1	.04¾	.03½	.04¾	.03	.04¾	.03½	.04¾	.03½			.04	.03¾	
Winnipeg	1	.03		.04	.03½			.03				.04		1,000
Develop Co.:														
Can. G. F. S.	0.10	.05	.04	.05	.04½	.05	.04¼	.05¼	.04¾			.05¼	.04¾	11,700

Total sales, 29,700 shares.

STOCK QUOTATIONS.

NEW YORK.

Name of Company.	Location.	Par val.	Aug. 9. H.	Aug. 9. L.	Aug. 10. H.	Aug. 10. L.	Aug. 12. H.	Aug. 12. L.	Aug. 13. H.	Aug. 13. L.	Aug. 14. H.	Aug. 14. L.	Aug. 15. H.	Aug. 15. L.	Sales
Alamo	Colo.	$1			.15	.14½									3,500
Amalgamated c.	Mont.	100	113¾	111¾	112½	111⅝	112¼	111⅛	113¾	112⅛	113⅝	112⅝	113½		34,515
Anaconda, c.	Mont.	25	41.50	41.00	44.00	43.50			44.25	44.13	44.25		44.75		3,400
Anaconda Gold.	Colo.	5													
Argentum-Jun.	Colo.	2	.15		.14						.12				1,500
Brunswick Con.	Cal.	1	.11						.11		.10				1,500
Catalpa	Colo.	10	.14												300
Comstock T.	Nev.	100	07		.07		.07		.07						1,300
" bonds.	Nev.	100			.07		.07								5,000
Con. Cal. & Va.	Colo.	2½	2.10		2.05		2.10		2.10		2.08				900
Creede & Cr. Cr.	Colo.	1	.10												1,000
Cripple Cr. Con.	Colo.	8							.09½						1,000
Dunkin	Colo.	1							.10						500
Eureka Con	Nev.	2½					.25								100
Gold Dollar	Colo.	1													500
Golden Fleece	Colo.	1							.86						300
Hale & Norcross	Nev.	3													
Horn Silver	Utah	30													
Isabella	Colo.	1					.50				.49	.48			200
Jack Pot	Colo.	1													
Little Chief	Colo.	1			.13		.13								500
Moulton	Mont.	5							.30						200
Ontario	Utah.	100													
Ophir	Nev.	3					.87		.90		.90				800
Pharmacist	Colo.	1													
Phoenix, g.	Ariz.	1	.09												100
Portland	Colo.	1					2.95		2.90						300
Quicksilver	Cal.	100	4.00				4.00								300
" pf.	Cal.	100	10.75						10.00						110
Standard Con	Cal.	10	3.65		3.65										200
Union Copper	N. C.	10	5.13	4.88	5.13	4.88	5.13	4.88	5.13	4.88	5.13	4.88	5.13	4.88	
Yellow Jacket	Nev.	3			.26										300

Total sales 48,295 shares.

COAL AND INDUSTRIAL STOCKS.

Am. Agr. Chem.	U. S.	$100	29	26	29	27	29	26	29	28	29	28⅛	29	28	
Am. Sm. & Ref.	"	100	52¾	51½	51	50¼	51½	50¼	51⅝	51⅛	51⅞	51⅜	53¼		11,890
" " " pf		100	100	99⅞			99⅞	99¾	100		100⅜	100	100⅞		2,854
Col. Fuel & I.	Colo.	100							95¼		96¼	95¼	98		1,500
Col. & H. C.& I.	"	100	20¾	20									20¾		600
Int'l S. Pump	U. S.	100	39¼	33⅜	40	35	40	35	40	35	39	35⅝			
" " " pf	"	100	84	80	84	80	84	80	84	80	84	78			
*Mong. R. Coal	Pa.	100	14¾	14⅜	14½	14⅜	14⅜	14⅛	14½	14⅜					2,080
" " " pf	"	100	47¾		47		46⅝		46½						50
National Lead	U. S.	100	21	20¾											500
" " pf	"	100			90						90				400
National Salt	"	100	41½								43		43		240
" " pf	"	100	76¼				77½	76	77	76					1,200
*Pittsburg Coal	Pa.	100	31	30¾	30⅝	30¼	31¼	31	31¾	31					1,420
" " pf	"	100	94	93¾	93½		93¾	93⅝	95	94					408
Republic I. & S.	U. S.	100	19¾		19¼	18¾	19⅛	19⅛	20	19⅞	20⅛	20	20¾		4,880
" " pf	"	100	74		74	73½	74	73½	74½	74	75	74½	75		3,100
Sloss-Shef.S.& I.	Ala.	100							80						
" " pf		100													100
Standard Oil	U. S.	100	775	771	775	771	775	773½	775	773	780	778	775	770	
Tenn. C. I.&R.R.	Ala.	100	61	59½	59¾	59½	61	60⅝	61½	60¾	62	61¼	64		9,180
U. S. Steel Corp	U. S.	100	42⅝	41¾	41⅝	41½	43⅝	42	44	43⅝			44⅛		118620
" " pf.	"	100	91½	90⅞	90¾	90⅜	92½	91⅜	93⅜	92¾			93½		57,577
Va.-Car. Chem.	"	100	59⅞	59⅜	60	59⅜			59		121		121		300
" " pf.	"	100	121		125	120	121								800

* On Pittsburg, Pa., Exchange. Total sales, 89,527 shares

SAN FRANCISCO, CAL.

Name of Company.	Location.	Par value.	Aug. 8.	Aug. 9.	Aug. 10.	Aug. 12.	Aug. 13.	Aug. 14.
Belcher	Nev.	$3.00	.06	.07	.07	08	.08	.06
Best & Belcher	"	3.00	.19	.14	.15	.15	.14	.13
Caledonia	"	3.00	.30	.30	.30	.32	.30	.30
Challenge Con.	"	3.00	.33	.32	.35	.39	.37	.34
Chollar	"	3.00	.05	.04	.05	.05	.06	.05
Confidence	"	3.00	1.30	1.25	1.30	1.40	1.35	1.30
Con. California & Virginia	"	2.50	1.95	1.90	2.00	2.00	2.00	1.90
Crown Point	"	3.00	.07	.09	.10	.10	.10	.09
Gould & Curry	"	3.00	.14	.14	.13	.15	.16	.15
Hale & Norcross	"	3.00	.25	.25	.26	.27	.26	.28
Mexican	"	3.00	.13	.14	.14	.17	.16	.14
Occidental Con.	"	3.00	.03	.03	.03	.02	.03	.02
Ophir	"	3.00	.67	.83	.84	.87	.86	.82
Potosi	"	3.00	.05	.05	.05	.05	.05	.05
Savage	"	2.50	.06	.07	.07	.08	.08	.03
Sierra Nevada	"	3.00	.13	.13	.12	.19	.16	.14
Standard Con.	Cal.	10.00	3.65	3.65	3.65	3.25	3.65	3.65
Union Con.	Nev.	2.50	.11	.13	.14	.15	.14	.13
Utah Con.	"	1.00	.01	.01	.02	.05	.07	.05
Yellow Jacket	"	3.00	.28	.27	.29	.35	.33	.33

CALIFORNIA OIL STOCKS.*

Name of Company.	Shares Issued	Par Val.	July 27. H.	July 27. L.	July 29. H.	July 29. L.	July 30. H	July 30. L.	July 31. H.	July 31. L.	Aug. 2. H.	Aug. 2. L.	Aug. 3. H.	Aug. 3. L.	Sales
Blue Goose	5,000	$100									2.25		2 25	1.50	
Buckhorn	16,000	10.00							2.50		2.50		2.50		
Cal. Standard	500,000	1.00	.25	.23	.24	.23	.23	.21	.23	.21	.23	.20	.24	.21	2,400
Caribou	80,000	1.00			1.00		1.00	.97	.93	.93	.91	.90	.21	.81	100
El Dorado	100,000	1.00							1.00		1.00		1.00		
Four	300,000	1.00	.38				.40	37	.38	.37	.39	.37	.40	.37	1,200
Hanford	2,000	10.00	1.00	96.00	100	95.00	1.00	95.00	98.00	96.00	98.00	95.00	98.00	97.00	
Home	100,000	1.00	2.15	2.00	2.15	2.00	2.15	2.03	2.15	2.10	2.45	2.20	2.35	2.25	590
Homestake	10,000	10.00	7.00		7.25		.07		7.25	7.00	7.00				
Independence	500,000	1.00	.11	10	.10		.12	.16	.10		.12	.10	.11	.10	4,500
Junction	250,000	1.00	.09		.11	.10	.10		.11	.10	.11	.10	.11	.16	350
Kern	100,000	1.00	5.25		5.50	.65	6.00	5.13	5.13	5.00	5.25	5.13	5.13		160
Kern River	20,000	5.00	10.00		10.00		9.00		9.00				10.00	5.00	
Lion	240,000	1.00	.09	.08	.10	.08	.09	.08			.08	.07	.09		
McKittrick	500,000	1.00	.24		.24		.24		.24		.24		.24		
Monarch	390,000	1.00	.21	.20	.22	.20	22	.21	.24	.21	.21	.20	.21	.20	850
Monte Cristo	407,600	1.00			1.70	1.50	1.70	1.45	1.70	1.50	1.60	1.50	1.60	1.55	200
Occidental			.34		.35	.33	.35	.32	.35	.30	.32		.32	.30	1,116
Oil City Petrol	500,000	1.00	.27	.25	.26	.25	.26	.25	.27	.25	.26	.25	.26	.25	400
Peerless	92,000	10.00			4.85				5.25	4.90			5.88	5.25	450
San Joaquin	100,000	1.00	8.00	7 25	7.88	7.50	8.00	7.50	8.00	7.25	7.63	7.13	7.50	7.38	90
Sterling	200,000	1.00	1.30		1.25	1.18			1.25	1.30	1.25	1.20	1.23		100
Sunset	100,000	5.00													
Twenty-eight	60,000	1.25	1.35	1.28	1.35	1.25	1.35	1.28	1.35	1.30	1.33	1.30	1.35	1.50	1,500
Yukon	100,000	2.50											.33		

* Producers' Oil and San Francisco Oil Exchanges. Total sales, 13,676 shares.

MONTREAL, CANADA.

Name of Company.	Par val.	Week Aug. 13. H.	Week Aug. 13. L.	Sales.	Name of Company.	Par val.	Week, Aug. 13. H.	Week, Aug. 13. L.	Sales.
Big Three	$1	.02	.01		Montreal-London	0.24	.02	.01½	
California	1	.06	.04½		Nat'l Salt, com				
Can. Gold Fields	0.10	.05½	.04½	2,500	" " pf				
Deer Trail Con.	1	.03	.01½		North Star		.64	.50	1,000
Evening Star	1	.06	.02		Payne	1	.20	.13	2,000
Golden Star	1	.09	.05		Rambler-Cariboo	1	.50	.38	
Gold Hills Dev.	1	.02½	.02		Republic Con.	1	.04	.03	7,800
Knob Hill	1	.60	.55		Slocan-Sovereign	1	.03	.02½	
Monte Christo	1	.02½	.01	9,000	Virtue	1	.10	.06½	4,000
Montreal G. F.	1	03	.02		War Eagle	1	.15	.12	

BOSTON, MASS.†

Name of Company.	Par val.	Shares listed.	Aug. 8. H.	Aug. 8. L.	Aug. 9. H.	Aug. 9. L.	Aug. 10. H.	Aug. 10. L.	Aug. 12. H.	Aug. 12. L.	Aug. 13. H.	Aug. 13. L.	Aug. 14. H.	Aug. 14. L.	Sales
Adventure Con.c	$25	100,000	24.50	24.00	24.00				24.00		23.50		24.50	24.00	921
Allouez, c.	25	80,000	3.00						3.50	3.38	3 25				393
Amalgamated, c.	100	1350,000	113	111½	113⅜	112	113⅜	111⅝	112½	111¼	113⅜	113	113¾	113	6,774
Am. Z. L. & Sm.	25	60,000					12.50				12.00				65
Anaconda, c.	25	1200,000											44.50		50
Arcadian, c.	25	150,000					15.40		15.00		15.00		15.75	15 50	228
Arnold, c.	25	60,000	2.00				2.00	1.50	1.50		1.50				205
Ash Bed, c.	25	40,000													
Atlantic, c.	25	40,000	36.50		36.50				35.00						140
Baltic	25	100,000	50.00						51.00	50.75	50.00		51.50	51.00	615
Bingham, c. g.	10	190,000			42.25	41 50	42.00				42.00	41 00	42.00	41.00	763
Bonanza Dev.	10	300,000					1.38						1.25		75
British Col.	5	200,000													
Cal. & Hecla, c.	25	100,000	730	720	730	720	720		717	700	700		705	700	235
Centennial, c.	25	90,000	27.00	26.75	27.00								27.50		525
Cochiti, g.	10	193,750					5.00			5.00					150
Cons. Mercur, g.	5	1000,000	3.00												200
Con. Z.&L.M.&S.	10	110,000													
Copper Range, c.	25	100,000	75.00	74.50	75.75	74.00			75.00		74.00		76.50	75.88	867
Daly-West, g.	20	150,000											40.00		5
Dominion Coal.	100	150,000	38.50				38.25								150
do, pref.	100	30,000	116⅜		116								116¾	116	51
Elm River, c.	12	100,000			4.00										10
Franklin, c.	25	100,000	17.75	17.63					17.50		17.00		17.50	17.25	159
Humboldt, c.	25	40,000													
I. Royale Con., c	25	150,000	43.00	42.00	43.00				41.50	42.00	41.13	41.00	41.00	40.00	3,328
Mass Con., c.	25	100,000	20.75	20.50	20.75	20.50	20.75	20.50	20.75	20.50	21.00	20.63	21.00	20.75	1,505
Mayflower, c.	25	100,000							1.50						50
Merced, g.	15	100,000													
Michigan, c.	25	100,000	12.50		12.50		13.00		13.00	12.50	13.00				290
Mohawk, c	25	100,000	41.50		41.50	41.00	41.50	41.00	41.50	41.25	41.50		42.00	41.50	941
Mont. C. & C.	25	200,000	5.50		5.50	5.00			5.00		5.00				945
N.E. Gas & Coke	100	100,000	6.00	5.50	5.50		5.50	5.25	5.50	5.25	6.00	5.50			905
New Idria	5	100,000													
Old Colony, c.	25	100,000													
Old Dominion, c	25	150,000	29.75	29.12	30.00	29.25			30.00		30.00	29.50	30.00	29.88	630
Osceola, c.	25	93,000	97.00		97 00	96.75	96.50		96.00		97.00				484
Parrot, s c.	10	229,350	50.50	50.13	50.50	50.00	50.50				50.00		50.50	50.25	366
Phoenix Con., c.	25	100,000	4.50		4.25										100
Quincy, c.	25	100,000	170				170		170						40
Rhode Island, c.	25	100,000	4.25	4.00							4.20	4.25	4.50		280
Santa Fe, g. c.	10	250,000													
San Ysabel, g.	5	130,000													
Tamarack, c.	25	60,000	343		343		343		343		350	3.44			68
Tecumseh, c.	25	80,000											1.88	1.75	200
Tennessee, c.	25	175,000													
Trimountain, c.	25	100,000							51.00				51.50		80
Trinity, c.	25	160,000	34.50	33.50	36.00	34.75			34.50		34.50		34.00		827
Union	25	80,000													
United States, g.	25	250,000	18.00		18.38	18.00			18.00		18.00		18.38	18.25	972
U. S. Oil	25	100,000			12.00				12.00						140
Utah Con., g.	5	900,000	28.75	28.50	29.50	28.50	29 00		29.5	29 00	30.00	28.50	29.00		553
Victoria, g.	25	100,000	7.25	7.00	7.00		7.00		7.00	6.75	6.75	6.50	6.75		850
Washington, c.	25	60,000													
Winona, c.	25	100,000									2.50		2.50		750
Wolverine, c.	25	60,000	63.25	63.00	64.00	63.75	63.00	62.13	63.5.		64.00	63.25			492
Wyandot, c.	25	100,000					1.50			1.50	1.25				155

† Official quotations Boston Stock Exchange. Total sales, 27,342 shares.

COLORADO SPRINGS, COLO.†

Name of Company.	Par val.	Aug. 5. B.	Aug. 5. A.	Aug. 6. B.	Aug. 6. A.	Aug. 7. B.	Aug. 7. A.	Aug. 8. B.	Aug. 8. A.	Aug. 9. B.	Aug. 9. A.	Aug. 10. B.	Aug. 10. A.	Sales
Acacia	$1	.15¾	.15⅞	.16	.16⅛	.16⅜	.16⅝	.16¼	.17	.16⅜	.16⅝	.15⅞	.16⅛	56,533
Alamo	1	.13½	.14	.13⅛	.13⅜	.15⅛	.13⅝	.13⅛	.13⅝	.13⅜	.13⅝	.13⅜	.13⅝	14,500
Am. Con	1	.05		.05	.05¼	.04⅝	.05⅛			.04⅞	.05⅛	.04⅞	.05¼	7,000
Anaconda	1	.35		.35	.36	.35	.36	.31		.35				8,500
Anchor	1	.01¼	.02½	.01⅝	.02¾	.01½	.02½		.02¼		.02¼	.01½	.02	
Antelope	1		.02	.01½	.02		.01⅜	.01⅛	.02		.02		.02	
Aola	1	.03½	.03¾			.03	.03¼	.03		.03	.03¼	.03	.03⅛	
Arg'ntum J	2	.14⅞		.14⅞		.14⅝	.14¾	.14⅝	.15	.12	.14	.12	.14	22,500
Banner	1	.02		.02	.02⅛	.02	.02½	.02	.02½	.02	.02⅛	.02	.02⅛	5,000
Battle Mt.C	1		.17⅜	.15⅜	.17½	.16¼	.17						.17	1,000
Black Bell	1	.10	.11	.10	.10¾	.10	.10⅞	.10	.11	.10	.11	.10	.11	2,000
Blue Bell	1	.14¼		.14⅜	.16	.14	.16	.13		.14		.14		1,000
Buckhorn	1	.03	.03½	.03⅛		.03⅜	.04	.03½	.03⅝	.03⅜	.04			1,700
Cadillac	1	.02	.02⅛	.02	.02⅛	.02	.02¼			.02	.02¼	.02	.02⅛	5,000
Central C'n	1	.07	.07½	.07	.07¼	.07¼		.07⅛	.07¼	.07¼	.07½	.07⅛	.07⅜	26,000
Champion	1	.01½	.04⅜	.04½	.05	.04½	.05	.04½	.05	.04½	.05	.04½	.05	
Chicolo	1	.01⅝	.02	.01⅝	.02	.01⅝	.02	.01⅝		.01⅝	.02		.02	1,000
C. K. & N.	1	.02¼	.02½	.02⅛	.02¼	.02	.02⅜	.02	.02⅜	.02⅝	.02¼	.02	.02⅜	3,000
C. C.Col'bia	1	.23¾	.24	.24	.24½	.24½	.25	.24½	.24⅝	.24⅞	.25	.24⅞	.25	77,500
C. C. G. Ext	1	.08¾		.08½	.09	.08	.08¾	.08	.08¾	.07⅞	.09	.08¾	.08¾	7,000
C. C. & Man	1	.07⅛	.07⅜	.07¼	.07½	.07¼	.07⅝	.07¼	.07⅝	.07¼	.07½	.07⅜	.07⅝	8,000
Creede& CC	1	.07		.07		.07		.07⅜		.07		.07		
C. C. Con.	1	.07¼		.07½		.07⅝	.08	.07⅝		.07½	.08	.07⅝	.08	1,000
Dante	1	.05	.08½	.04⅝	.05	.04½	.05	.04⅝	.05	.04⅞	.05	.04⅝	.05	8,500
Dr. Ja'k P't	1	.62½	.63	.60		.62½	.64	.62	.63⅝	.63	.64		.62½	85,100
Eclipse	1	.12½	.12⅞	.12⅝	.12¾	.12⅜	.12½	.12⅜	.12⅝	.12½	.12⅝	.12¾	.12⅜	117,000
Elkton Con	1	1.77½		1.76½	1.80	1.75	1.78	1.76	1.77	1.76	1.77	1.76	1.77	5,748
El Paso G.	1	.48¼	.44¼	.48¾	.50	.48¾	.49⅜	.49½	.49¾	.49⅞	.50	.49¾	50	25,322
F.Rawlings	1			.15	.20		.20	.15	.20	.19	.20¼			1,000
Findley	1	.09⅞	.10¾	.09⅞	.10	.09½	.10	.09	.10	.09½	.09½	.09	.09⅛	5,000
Gold Dollar	1	.17⅛	.17¾	.17⅜	.17¾	.17¼	.17⅜	.17¼	.17⅜	.17⅜	.17⅜	.17⅜	.17⅜	149,500
Golde'Cycl.	1	.67½	.69	.65	.69	.65⅝	.66⅝	.65⅞	.66½	.64¼	.66⅝	.64½	.66⅝	14,500
Golden Fl.	1		.38	.34	.40	.34	.40	.36⅝	.40	.37	.40	.37	.40	1,000
Gold Sov'n.	1	.04½	.05½	.04⅝	.05¼	.04⅝	.05	.04⅝	.04⅞	.04⅝	.04⅞	.04⅝	.04⅞	1,500
Hayden	1	.01		.01	.02	.01	.02	.01	.02	.01		.01⅝		5,000
Ing. Con.	⅙	.15⅜	.16	.15⅜	.15⅞	.15½	.16	.15⅜	.16	.15⅜		.15⅜	.16	500
Ironclad	1	.05⅜	.06⅞	.05½	.05⅝	.05½	.06	.05½		.05½	.06	.05½	.05⅝	7,000
Isabella	1	.46	.47	.47½	.48	.57	.58	.46½	.47½	.46½			.47½	48,200
Jack Pot	1	.41¼	.45	.39½	.41		.43	.39	.42	.39	.45	.40	.45	5,500
Josephine	1			.01¼		.01		.01		.01⅛	.01¼			11,000
Key West	1	.01½	.01¾	.01⅜		.01⅜		.01½	.02	.01½		.01½		2,000
Lexington	1	.06	.06⅜	.06⅛	.06¼	.06⅛	.06⅜	.06⅛		.06		.06		5,500
Magnet R.	1	.02⅝	.02⅜	.02½	.02⅝	.02⅜	.02⅝	.02½	.02⅝	.02⅜	.02⅝	.02½	.02⅝	1,000
Margaret	1	.01⅜	.02	.01⅜		.01⅜		.01⅜		.01⅜		.01⅜	.01⅞	3,000
Margery	1			.01½	.02	.01½	.02			.01	.02		.02	
Midway	1	.03¼	.03¾	.03⅛	.03¼	.03⅛	.03¼	.03⅛		.03¼	.03¾	.03⅛	.03¼	3,100
M. J. T	1	.01⅝	.02		.02	.01½	.02			.02		.02	.02	
Mobile	1	.02	.02⅜		.02¼	.02	.02⅜	.02	.02⅜					3,000
Moll.Dwyer	1	.07¼	.07⅝	.07	.07⅝	.06⅞	.07	.06¾	.06⅞	.07	.07¼	.06¾	.06⅞	62,000
Mollie Gib.	1	.36		.36½	.39½	.36½	.37	.36	.40	.36½		.36½	.39	35,000
Monarch	1	.04½	.04⅞	.04⅜		.04	.04½	.04	.04⅜	.04⅜		.04	.04¼	
Montreal	1	.03	.03¼		.03⅝	.03	.03¼	.03	.03¼	.03	.03¼	.03	.03¼	1,000
Moon-A'c'r	1	.27½	.28½	.28	.28½	.28½				.29	.30	.29	.30	6,600
Morning S.	1	.02¾	.02⅝	.02½	.02⅝	.02⅝	.02⅞	.02⅝	.03	.03	.03⅛			29,000
National	1	.03½	.03⅝	.03⅜	.03¾	.03½	.03⅝	.03⅜	.03⅝	.03⅝	.03⅞	.03⅝	.03⅝	33,000
Nellie V.	1	.05¼	.05¾	.04¾	.05	.05⅜	.05½	.05	.05¼	.05	.05⅞	.04⅞	.05¼	12,500
New Haven	1	.05⅜		.06⅜		.05¼	.06	.05½	.06	.05⅜		.05⅜		1,000
Olive B'nch	1	.02½		.02½	.03	.02½	.03	.02½	.02⅝	.02½	.03	.02½	.02⅝	2,000
Oroie	1			.02⅝	.02¾	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.03	1,000
Orphan	1	.17½	.18	.18	.17⅞	.18	.17½	.18	.17⅞	.18	.17⅞	.18	.17⅞	1,500
Pelican	1	.01⅜	.02	.01⅜		.01⅜	.01¼	.01⅛		.01¼	.02	.01¼	.02	
Pharmacist	1	.08	.08¼	.08	.08¼	.08	.08¼	.08¼	.08¾	.08	.08¾	.08¼		19,000
Pilgrim	1		.07¼	.06½		.06⅜	.07¼			.06½	.07		.07	
Pinnacle	1	.07⅜	.08¾	.07¾	.08¼	.07⅞	.08¼	.07¾		.08		.08		8,000
Portland	1	3.05	3.07	3.05	3.07	3.05	3.07	3.05	3.07	3.05	3.07	3.05	3.08	3,460
Prince Alb.	1	.04	.04¼	.04½	.04¾	.04½	.04¾	.04¼	.04¾	.04¼	.04⅜	.04½	.04⅜	1,000
Princess	1	.04	.04⅜		.03⅞	.04		.04		.04		.04	.04	8,000
Progress	1	.05	.05⅜	.05	.05⅜			.05	.05¼	.05	.05⅛	.04⅜	.05¼	9,000
Pointer	1	.03½	.03¾	.03¾	.04¼	.04¼	.03¾	.03¾	.04	.03¾	.03⅞	.03⅜	.03⅝	82,500
Republic	1			.04¾	.05½	.04¾	.05½	.04¾	.05¾	.04⅞	.05½	.04⅞	.05¼	
Rob't Burns	1	.02⅝	.03¼	.03	.03¾	.03	.03¼	.02⅞	.03¼	.02⅞	.03¼	.02⅞	.03¼	2,000
Rose Maud	1	.05¾	.05⅞	.05	.15⅜	.05	.05¾	.05½	.05¾	.05¼	.05¾	.05⅛	.05¾	40,500
Rose Nicol	1	.06¾	.07	.06¾	.07	.06¾	.07	.06⅝	.06⅞	.06½	.06⅞	.06⅜	.06⅞	4,000
Sliver Gold	1	.01		.01		.01		.01		.01		.01		
Uncle Sam	1	.02⅝	.02⅞	.02⅝	.02¾		.03	.02¾	.02⅞	.02¾	.

STOCK QUOTATIONS.

LONDON.

Aug. 2.

Name of Company.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
American:			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields, g	Alaska	£300,000	1 0 0	2 3	Jan., 1901	11 3	13 9
Alaska-Treadwell, g.	"	1,000,000	5 0 0	1 6	July, 1901	4 12 6	4 17 6
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	" "	8 17 6	9 2 6
Copiapo, c	Chile	200,000	2 0 0	1 6	July, 1900	2 7 6	2 12 6
De Lamar, g., s	Idaho	400,000	1 0 0	1 0	May, 1901	2 6	3 9
El Oro, g	Mexico	1,000,000	1 0 0	1 3	July 1901	1 11 3	1 6 3
Enterprise, g	British Col	300,000	1 0 0	.....	.....	5 0	10 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 10 0	1 15 0
Hall Mg. & Sm., c., s	British Col	325,000	1 0 0	.....	.....	9 0	10 0
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	7 1 3	7 8 9
*Le Roi No. 2, g	" "	120,000	5 0 0	5 0	July, 1901	8 7 6	8 12 6
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	1 3	3 5
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	2 9	3 3
Mountain Copper	California	1,250,000	5 0 0	7 0	Apr., 1901	4 7 6	4 12 6
Stratton's Independence	Colorado	1,100,000	1 0 0	1 0	July 1901	1 1 3	1 5 9
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	June, 1901	1 9 6	1 0 6
Utah Con.,g.(Highl'nd Boy)	Utah	300,000	1 0 0	5 0	May, 1901	5 10 0	6 0 0
Velvet, g	British Col'mbia	150,000	1 0 0	.....	.....	8 9	11 3
Ymir, g	British Col'mbia	300,000	1 0 0	1 0	July, 1901	2 8 9	2 11 3
European:							
Linares, l	Spain	45,000	3 0 0	7 0	Mar., 1901	5 0 0	5 0 0
Mason & Barry, c., sul.	Portugal	420,000	1 0 0	12 6	May, "	3 5 0	3 10 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£2 5s	May, 1901	52 0 0	52 2 6
" " pref	"	1,625,000	5 0 0	5s	" "	6 2 6	6 7 6
Tharsis, c	"	1,250,000	2 0 0	12 0	May, 1900	5 17 6	6 2 6
Australia and N. Zeal'd.							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	1 18 9	2 1 3
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 0	May, 1901	1 15 0	1 16 3
Great Boulder Prop	W. Australia	175,000	2 0	1 6	June, 1901	18 0	18 6
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	3 11 3	3 13 9
Ivanhoe Gold Corp	"	1,000,000	5 0 0	4 0	July, 1901	7 12 6	7 12 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	3 2 6	3 5 0
Lake View Consols, g	"	250,000	1 0 0	5 0	July, 1901	7 12 6	7 15 0
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 6	July, 1901	4 1 3	4 3 9
Mt. Morgan, g	Queensland	1,000,000	1 0 0	3	Aug., 1901	4 0 9	4 2 6
Waihi g.	New Zealand	330,000	1 0 0	2 6	June, 1901	5 8 9	5 12 3
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	rts.	May, 1901	5 17 6	6 0 0
Mysore Gold	"	256,300	10 0	4 0	July, 1900	5 16 3	5 18 9
Nundyroog, g	"	242,000	10 0	1 3	July, 1901	2 1 3	2 3 9
Ooregum, g	"	145,000	10 0	2 0	Aug., 1901	2 11 3	2 13 9
" pref. g	"	120,000	10 0	2 0	" "	3 1 3	3 3 9
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 1 3	3 2 6
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1901	4 15 0	5 0 0
" " pref	"	150,000	2 0 0	5 0	" "	4 15 0	4 17 6
City & Suburban (New), g.	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	5 7 6	5 12 6
Con. Deep Level, g	"	200,000	1 0 0	x all	June, 1898	15 0	1 0 0
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	14 5 0	14 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	34 6 0	34 5 0
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	20 0 0	21 0 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	" "	9 15 0	10 5 0
Geldenhuis Est., g	"	300,000	1 0 0	10 0	" "	5 17 6	6 2 6
Henry Nourse, g	"	125,000	1 0 0	10 0	Apr., 1900	7 17 6	8 2 6
Jagersfontein, d	Orange Fr. St.	1,000,000	1 0 0	6 0	Dec., 1900	15 10 0	16 10 0
Johannesburg Con. Invet.	So. Africa	2,750,000	1 0 0	2 0	Aug., 1899	2 0 0	2 1 3
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	5 10 0	6 0 0
Langlaagte Estate, g	"	470,000	1 0 0	3 0	Sept., 1899	3 2 6	3 7 6
May Con., g	"	290,000	1 0 0	6 0	Aug., 1899	4 2 6	4 5 0
Meyer & Charlton, g	"	100,000	1 0 0	8 0	July, 1899	5 0 0	5 5 0
Namaqua, c	Cape Colony	200,000	2 0 0	8 0	June, 1900	4 0 0	4 5 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Aug., 1899	3 18 9	4 1 3
Rand Mines, g	So. Africa	490,000	1 0 0	15 0	" "	41 0 0	41 5 0
Robinson, g	Transvaal	2,750,000	5 0 0	8 0	.....	9 0 0	9 5 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	17 6	1 0 0
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 2 6	6 5 0
Wolhuter, g	"	850,000	4 0 0	2 0	Feb., 1899	4 0 0	4 5 0

C, copper. D, diamonds. G, gold. L, lead. S, silver. *Ex-dividend.

SPOKANE, WASH.

Week Aug. 9.

Name of Company.	Par val.	B.	A.	Sales.	Name of Company.	Par val.	B.	A.	Sales.
Black Tail	$1	.9	.10¾	3,000	Princess Maud	0.10	.01	.01⅝	.....
Crystal	1	.04	.06½	2,000	Quilp	1	.12	.26	.....
Deer Trail Con	1	.02¾	.02⅞	5 000	Rambler Cariboo	0.25	.41	.48	3,500
Gold Ledge	1	.....	.01⅜	10 000	Reservation	1	.02½	.05	10,000
Lone Pine-Surp. Con	1	.04¾	.05⅛	2,000	Sullivan	1	.07	.08	.....
Morning Glory	0.10	.02¾	.03⅛	6,000	Tom Thumb	1	.12	.14	1,000
Mountain Lion	1	.28	.30	2,000					

MEXICO.

Aug. 9.

Name of Company.	Shares.	Last div'd.	Prices. Op'g.	Prices. Cl'g.	Name of Company.	Shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Durango:					Hidalgo:				
Capuzaya Guan.	2,400	.....	$10	$15	Soledad	960	$5.00	$260	260
Restauradora Guan.	10,000	.....	10	10	Sorpresa	960	5.00	260	260
Guanajuato.					Union Hacienda	2,000	5.00	200	200
Angustias	2,400	$5.00	95	100	Mexico:				
Cinco Senores	2,000	15.00	380	375	Coronas	500	.....	45	45
Guadalupe Hacie'a.	10,000	3.00	205	205	Esperanza y An	3,000	10.00	809	805
Hidalgo:					Michoacan:				
Amistad y Concord.	9,600	3.65	37	37	Luz de Borda	4,000	.....	20	20
Arevalo	720	.....	200	300	S. Luis Potosi:				
Bartolome de Med.	2,000	2.00	45	45	Concep. aviad	2,400	.....	185	185
Carmen	1,100	7.75	130	130	Zacatecas:				
Luz Ca Maravillas.	1,100	.....	80	80	Asturiana	2,500	10.00	90	95
Pabellon	400	27.89	10	10	C'delar de Pinos	2,500	.....	190	190
Real del Monte	2,554	10.00	550	550	Palma de Somb	2 400	.....	80	80
San Francisco Hc	6,000	1.00	90	88					

PARIS

Aug. 1.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,795.00	1,787.00
" " Firminy	"	" "	8,000,000	500	200.00	2,950.00	3,000.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	3,980.00	4,450.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1,480.00	1,445.00
Anzin	"	Coal	.....	.....	260.00	4,880.00	5,001.00
Boleo	Lower Cal	Copper	.....	500	176.00	2,300.00	2,250.00
Briansk	Russia	Coal & iron	.....	500	.....	570.00	547.00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	29.00	30.00
Courrieres	France	Coal	600,000	500	90.00	2,140.00	2,215.00
Dombrowa	Russia	"	.....	500	75.00	950.00	933.00
Dourges	France	Coal	12,000,000	500	700.00	24,700.00	24,700.00
Dynamite Centrale	"	Explosives	.....	500	22.50	522.00	525.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	820.00	851.00
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	5.00	5.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	94.40	87.50
Laurium	Greece	Zinc & lead	16,800,000	500	30.00	378.00	355.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	425.00	435.00
Metaux, Cie. Fran. de	France	Metal d'iers	25,000,000	500	10.00	420.00	425.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	55.00	867.00	872.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	500.00	500.00
Napthe Nobel	"	"	.....	.....	.....	550.00	550.00
" " parts	"	"	.....	.....	.....	10,900.00	9,900.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	530.00	534.00
Penarroya	Spain	Coal etc	.....	500	100.00	1,135.00	1,185.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	1.25	1.25
Salines de l'Est	France	Salt	.....	500	5.00	210.00	215.00
Salines du Midi	"	"	.....	500	25.00	675.00	700.00
Vielle Montagne	Belgium	Zinc	9 000,000	80	36.00	607.00	600.00

DIVIDENDS.

COAL, IRON, OIL, AND INDUSTRIAL COMPANIES.

Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Latest. Amt.
Alabama Coal & Iron, pf	Ala	$2,500,000	25,000	$100	$87,500	$306,250	June. 1901	1.75
Altoona Coal & Coke	Pa	2,500 000	250 000	10	75,000	75,000	Jan. 1901	.30
Am. Agricul. Chem., pf.	U. S.	20,000,000	170,449	100	510,000	2,040,000	Apr. 1901	3.00
American Cement	Pa	2,100,000	200,000	10	160,000	300,000	July. 1901	.40
American Coal	Md	1,500,000	60,000	25	75,000	1,057,500	Mar. 1901	1.25
am. Iron & Steel, com.	Pa	17,000,000	34,000	50	13,600	476,000	May. 1901	.15
Am. Iron & Steel, pf	Pa	3,000,000	60,000	50	112,500	275,000	July. 1901	.62½
Am. Sheet Steel, pf.	U. S.	26,000,000	245,000	100	857,500	857,500	Apr. 1901	1.75
Am. Steel Hoop, pf	U. S.	14,000,000	140,000	100	490,000	1,715,000	Apr. 1901	1.75
Arizona Western Oil	Cal	500,000	500,000	1	12,000	18,000	June. 1901	.02
Aztec Oil	Cal	250,000	235.000	1	2,300	2,300	Apr. 1901	.02
Bethlehem Steel	Pa	15,000 000	300,000	50	300,000	1,200,000	June. 1901	.50
Buckhorn Oil	Cal	200,000	16,000	10	.....	3,800	Mar. 1900	.05
Burlington Oil	Cal	60,000	60,000	1	600	4,200	Jan. 1901	.01
California Oil & Gas	Cal	2,000,000	200,000	10	250,000	250,000	Jan. 1901	1.25
Cambria Steel	Pa	50,000,000	900,000	50	800,000	2,400,000	June. 1901	1.50
Central Oil	W.Va	1,500,000	60,000	25	25,000	67,500	May. 1901	.37½
Central Oil	Cal	750,000	662,800	1	59,652	100,364	July. 1901	.03
Central Point Con. Oil	Cal	200,000	190,000	1	15,200	22,800	June. 1901	.02
Colo. Fuel & Iron, com.	Colo	40,000,000	400,000	100	279,500	435,000	July. 1901	1.75
Colo. Fuel & Iron, pf.	Colo	2,000,000	20,000	100	80,000	1,240,000	Feb. 1901	4.00
Consolidation Coal	Md	10,250,000	102,500	100	205.000	5,318,000	Feb. 1901	2.00
Consolidated Coal	Ill	5,000,000	50,000	100	50,000	50,000	July. 1901	1.00
Continental Oil	Cal	300,000	260,000	1	7,800	10,400	Apr. 1901	.03
Crucible Steel, pf	U. S.	25,000,000	250.000	100	853,982	1,280,973	June. 1901	1.75
Dabney Oil	Cal	1,000,000	1,000,000	1	10,000	10.000	May. 1901	.01
Diamond Star Oil	Cal	250,000	100,000	1	.....	6.250	Nov. 1900	.02
Diamond State Steel	Del	3,000,000	150,000	10	60,000	160,000	Jan. 1901	.40
Empire Steel & Iron, pf.	U. S.	5,000,000	23,700	100	71,100	248,850	July. 1901	1.50
Federal Steel, com.	U.S.	100000,000	464,843	100	2,324,215	4,067,377	Feb. 1901	5.00
Federal Steel, pf.	U.S.	100000,000	532,609	100	2,396,742	9,054'396	July. 1901	1.50
Flat Top C. L. Ass'n,com	Va	5,000,000	37,141	100	111.423	389,981	Aug. 1901	1.00
Flat Top C. L. Ass'n, pf.	Va	5,000,000	37,141	100	111.423	2,061,309	Aug. 1901	1.00
Four Oil	Cal	300,000	300,000	1	12,000	12,000	May. 1901	.01
Fullerton Oil	Cal	25,000	25,000	1	750	750	June. 1901	.03
General Chem., com	U. S.	12,500,000	71,679	100	143,358	557,624	June. 1901	1.00
General Chem., pf	U. S.	12,500,000	82,600	100	371,700	1,137,578	July. 1901	1.50
Globe Oil	Cal	600,000	600,000	1	3,000	3,000	Apr. 1901	.00½
Gray Eagle Oil	Cal	250,000	100,000	2½	97,000	217,000	May. 1901	.47
Great Western Oil	Cal	100,000	10,000	10	.....	10,000	Oct. 1900	.10
Home Oil	Cal	100,000	100,000	1	40,500	240,500	June. 1901	.07½
Homestake Oil	Cal	100,000	10,000	10	9,000	32,000	June. 1901	.15
Jefferson&Clearf.C'l,cm	Pa	1,500,000	15,000	100	.....	30,000	Aug. 1900	2.00
Jefferson&Clearf.C'l,pf.	Pa	1,500,000	15,000	100	37,500	225,000	Feb. 1901	2.50
Kern Oil	Cal	100,000	100,000	1	25,000	375,000	Jan. 1901	.25
Lehigh Coal & Nav.	Pa	14,346,650	286,933	50	430,399	18,947,389	May. 1901	1.50
Los Angeles Oil & Trans.	Cal	500,000	500,000	1	125,000	125,000	Feb. 1901	.25
Maryland Coal, pf.	Md	1,885,005	18,850	100	47,125	687,994	July. 1901	2.50
Monongahela R. Coal,pf	Pa	10,00),000	200,000	50	700,000	1,050,000	July. 1901	1.75
Montana Coal & Coke	Mont	5,000,000	200,000	25	.....	120,000	Oct. 1900	.30
National Salt, com	U. S.	7,000,000	70,000	100	315,000	510,000	Aug. 1901	1.50
National Salt, pf	U. S.	5,000,000	50,000	100	262,500	787,500	Aug. 1901	1.75
National Steel, pf	Pa	27,000,000	270,000	100	945,000	4,252,500	June. 1901	1.75
National Tube, com	U. S.	40,000,000	398,604	100	1,195,812	2,391,624	May. 1901	1.50
National Tube, pf	U. S.	40,000,000	399,963	100	2,099,805	5,599,481	July. 1901	1.75

Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Latest. Amt.
New Central Coal	Md	$1,000,000	50,000	$20	.....	$510,000	Nov. 1900	.40
New Haven Iron & Steel	Conn	500,000	100,000	5	$22,500	117,500	Apr. 1901	.10
Oceanic Oil	Cal	100,000	100,000	1	.....	2,000	Dec. 1900	.01
Ohio & Ind. Nat. Gas	U. S.	10,000,000	90,000	1 00	180,000	540,000	June. 1901	1 00
Oil City Petroleum	Cal	500,000	500,000	1	5,000	5,000	July. 1901	.00½
Pacific Coast Borax	Cal	2,000,000	19,000	100	133,000	895.500	July. 1901	1.00
Park Crude Oil	Cal	100,000	82,146	1	.....	4.897	Sept. 1900	.01
Pennsylvania Salt Mfg.	Pa	5,000,000	100,000	50	150,000	12,700,000	Apr. 1901	3.00
Pennsylvania Steel, pf.	Pa	25,000,000	250,000	100	490,000	621,250	July. 1901	1.75
Phila. Gas, com	Pa	14,752,131	295,042	50	626,966	1,364,547	July. 1901	.75
Phila. Gas, pf	Pa	3,998,350	79,967	50	99,959	299,877	Mar. 1901	1.25
Pittsburg Coal., pf	Pa	32,000,000	320,000	100	1,680,000	3,920,00	July. 1901	1.75
Producers' & Con. Oil	Cal	1,000,000	10,000	100	4,000	57,000	Mar. 1901	.10
Reed Crude Oil	Cal	2,000,000	2,000,000	1	50,000	50,000	Apr. 1901	.02½
Republic Iron & Steel,pf	U. S.	25,000,000	203,069	100	1,066,113	2,842,967	July. 1901	1.75
San Joaquin Oil & Dev.	Cal	100,000	100,000	1	10,000	10,000	Jan. 1901	.10
Shawmut Oil	W.Va	1,250,000	50,000	25	75,000	75,000	Aug. 1901	.50
Shelby Iron	Ala	1,000,000	10,000	100	50,000	300,000	May. 1901	5.00
Sloss-Sheffield Ir.&St.,pf	U. S.	20,000,000	67,000	100	348,500	695,500	July. 1901	1.75
So. Cal. Oil & Fuel	Cal	300,000	200,000	1	18,000	24,000	May. 1901	.01½
Standard Oil (of N. J.)	U. S.	100000,000	1,000,000	100	31,500,000	104 625,000	June. 1901	12.00
Sunday Lake Iron	Mich	1,000,000	40,000	25	40,000	40,000	Feb. 1901	1.00
Susquehanna I. & S., pf.	Pa	1,500,000	300,000	5	67,500	582,500	July. 1901	.15
Tenn. Coal, I. &R.R.,com	Tenn	23,000,000	225,536	100	.....	1,102,144	Nov. 1900	2.00
Tenn. Coal, Ir. & R.R.,pf	Tenn	248,000	2,480	100	14,880	257,920	Aug. 1901	2.00
Texas & Pacific Coal	Tex	2,000,000	20,000	100	90,000	1,890,000	July. 1901	1.50
Union Oil	Cal	10,000,000	52,672	100	47,404	47,404	May. 1901	.45
United States Crude Oil.	Cal	100,000	100,000	1	14,000	17,220	July. 1901	.02
United States Marble	Wash	2,000,000	2,000,000	1	23,750	23,750	July. 1901	.00¼
United States Oil	W.Va	2,500,000	100,000	25	.....	744,250	Oct. 1900	.50
U. S. Steel Corp., com	U.S.	550000,000	5,064,734	100	5,064,734	5,064,734	Sept. 1901	1.00
U. S. Steel Corp., pf.	U.S.	550000,000	5,084,863	100	8,897,510	8,897,510	Aug. 1901	1.75
Va.-Carolina Chem.,com	U. S.	38,000,000	380,000	100	240,000	1,770,000	June. 1901	1.00
Va.-Carolina Chem.,pf.	U. S	12,000,000	120,000	100	680.000	4,860,000	July. 1901	2.00
Warner Oil	Cal	200,000	200,000	1	10,000	10,000	June. 1901	.01
Warwick Iron & Steel	Pa	1,500,000	139,662	10	41,899	237,425	May. 1901	.30
West Lake Oil	Cal	500,000	500,000	1	.....	50,000	Sept. 1900	.01
Westmoreland Coal	Pa	5,000,000	250,000	50	.....	750,000	Oct. 1900	1.50

This table is corrected up to July 26th. Correspondents are requested to forward changes or additions.

DIVIDENDS.

GOLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Name and Location of Company.		Author-ized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.		Amt.
Acacia, g.	Colo..	$1,500,000	1,500,000	$1	.....	$45,000	Dec..	1900	.01
Adams, s.l.c.	Colo..	1,500,000	150,000	10	$7,500	708,500	Apr..	1901	.05
Ætna Con., q.	Cal..	500,000	100,000	5	.....	225,000	Apr..	1900	.15
Alaska Goldfields	Alask	1,500,000	250,000	5	135,000	260,000	Jan..	1901	.54
Alaska-Mexican, g.	Alask	1,000,000	180,000	5	54,000	555,031	July..	1901	.10
Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	225,000	4,745,000	July..	1901	.37½
Alice, g. s.	Mont.	10,000,000	400,000	25	.....	1,875,000	Apr..	1898	.05
Alliance, g.	Colo..	500,000	500,000	1	.....	47,500	Nov..	1899	.07
Amalgamated, c.	Mont.	155000,000	1,500,586	100	6,041,172	13,541,172	July..	1901	2.00
Amanda, g.	Colo..	1,000,000	1,000,000	1	.....	10,000	June.	1900	.01
Amazon, g.	Colo..	600,000	600,000	1	.....	121,882	May..	1900	.10
American, g.	Colo..	3,000,000	300,000	10	.....	420,000	Dec..	1899	.04
Amer. Sm. & Ref., pref.	U. S..	50,000,000	500,000	100	1,834,000	4,516,553	July..	1901	1.75
Am. Zinc, Lead & Sm.	Mo...	2,500,000	60,000	25	.....	180,000	Jan..	1900	1.00
Anaconda, c.	Mont.	30,000,000	1,200,000	25	2,400,000	19,350,000	Apr..	1901	2.00
Anchoria-Leland, g.	Colo..	600,000	600,000	1	.....	198,000	Apr..	1899	.03
Anglo-Mexican, g.	Mex..	2,001,625	400,230	5	.....	1,825,048	Dec..	1899	.24
Appie Ellen, g.	Colo..	600,000	600,000	1	.....	25,000	Nov..	1898	.04
Argonaut, g.	Cal...	2,000,000	200,000	10	.....	490,000	May..	1900	.05
Arizona, c.	Ariz..	3,775,000	.....	....	761,428	2,226 276	July..	1901	6.72
Associated, g.	Colo..	1,250,000	1,250,000	1	.....	84,000	Feb..	1899	.01
Athabasca, g.	B.C..	550,000	110,000	5	.....	25,000	Oct..	1900	.23
Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	880,000	Feb..	1901	2.00
Bald Butte, g. s.	Mont.	250,000	250,000	1	105,000	1,027,148	July..	1901	.06
Bankok-Cora Belle, g.	Colo..	600,000	600,000	1	.....	107,510	July..	1896	.01
Big Seven, g.	Cal...	100 000	100,000	1	.....	6,000	Apr..	1898	.03
Big Six, g. s. l.	Colo..	500,000	500,000	1	.....	15,000	May..	1898	.00½
Boston, q.	Cal...	1,000,000	100,000	10	.....	20.000	Jan..	1900	.10
Boston-Aurora, pref.	Mo...	800,000	32,000	25	.....	66,160	May..	1900	.50
Boston & California, g.	Cal...	600,000	600,000	1	.....	72,000	June.	1899	.06
Boston & Colo. Smelting	Colo..	750,000	15,000	50	22,500	337,600	Apr..	1901	.75
Boston Duenweg, z.	Mo...	1,000,000	40,000	10	....	56,000	June.	1900	.10
Boston Get There, z	Mo...	250,000	22,500	10	....	20,250	Apr..	1900	.10
Boston Gold-Copper Sm.	Colo..	1,000,000	1,000,000	1	50,000	100,000	May	1901	.02½
Boston& Mont.Con.,c.s.g	Mont.	3,750,000	150,000	25	4,500,000	25,475,000	Aug	1901	10.00
Bosun, s. l.	B. C..	250,000	50,000	5	12,500	12,500	Apr..	1901	.25
Breece, i. s.	Colo..	5,000,000	200,000	25	20,000	120,000	June.	1901	.05
Buffalo Hump, g.	Idaho	1,000,000	100,000	10	25,000	300,000	Jan..	1901	.10
Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	.....	2,498,400	June.	1900	.10
Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	126,000	1,179,000	June.	1901	.07
Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	.....	1,000,000	Dec..	1900	5.00
Butterfly-Terrible, g.	Colo..	1,500,000	1,250,000	1	25,000	25,000	July..	1901	.00¾
Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	3,000,000	75,850,000	July..	1901	15.00
Cariboo-McKinney, g.	B.Col	1,250,000	1,250,000	1	.....	478,087	Oct..	1900	.01½
Centen'l-Eureka, g.s.l.c.	Utah.	5,000,000	100,000	25	100,000	2,517,700	Apr..	1901	.50
Center Creek, l. z.	Mo....	1,000,000	100,000	10	20,000	60,000	July..	1901	.10
Center Star, g.	B. C..	3,500,000	3,500,000	1	105,000	175,000	Apr..	1901	.01
Central Eureka, g. s.	Cal...	4,000,000	400,000	10	10,000	30,000	June.	1901	.02½
Central Lead, l.	Mo...	1,000,000	10,000	100	35,000	242,000	July..	1901	.50
Champion, g. s.	Cal...	340,000	34,000	10	.....	402,300	Dec..	1899	.25
Cloverdale, z.	Mo...	1,000,000	100,000	10	.....	80,000	July..	1900	.20
C. O. D., g.	Colo..	500,000	500,000	1	.....	25,000	Mar..	1896	.01
Columbia, l.	Mo...	600,000	60,000	10	.....	12,125	June.	1900	.05
Columbian Hyd., c.	C'l'm	375,000	75,000	5	.....	463,500	Nov..	1899	.12
Commodore, g.	Colo..	1,200,000	1,200,000	1	.....	432,000	Jan..	1899	.04
Con. Cal. & Va., s.g.	Nev..	540,000	216,000	2½	64,800	3,963,600	July..	1901	.10
Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	250,000	1,728,500	Aug..	1901	.12½
Consolidated (New), g.	Colo..	2,500,000	1,900,000	1	57,000	57,000	July..	1901	.01
Copiapo, c.	Chile.	1,125,000	112,500	10	....	2,718,000	Dec..	1900	.80
Creede & Cripple C'k., g.	Colo..	800,000	800,000	1	16,000	16,000	May	1901	.02
Cripple Creek Con., g.	Colo..	2,000,000	2,000,000	1	.....	160,000	Mar..	1900	.08
Crœsus, g.	Cal...	1,000,000	200,000	5	66,000	217,300	July..	1901	.05
Crowned King, g. s.	Ariz..	6,000,000	600,000	10	.....	242,760	May	1901	.02
Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1	256,725	344,225	July..	1896	.10½
Daly-West, g.	Utah.	3,000,000	150,000	20	315,000	922,500	July..	1901	.30
Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	.....	1,350,000	May	1898	.15
Deer Trail Con., g.	Wash	3,000,000	3,000,000	1	.....	55,000	Dec..	1899	.00½
De Lamar, g. s.	Idaho	2,000,000	400,000	5	96,000	2,490,000	May	1901	.24
Della S., g. s.	Colo..	1,000,000	1,000,000	1	.....	60,000	Jan..	1897	.01
Dewey Con., g.	Utah.	10,000	10,000	1	3,250	5,850	June.	1901	.10
Doctor-Jack Pot Con., g	Colo..	3,000,000	2,900,000	1	203,000	203,000	July..	1901	.01
Doe Run, l.	Mo...	1,500,000	10,000	100	45,000	462,072	July..	1901	1.50
Ducktown, c. l. sul. (ord)	Tenn.	374,000	7,480	50	.....	133,144	May..	1900	5.00
Ducktown (founder).	Tenn.	1,000	200	5	.....	66,160	May..	1900	125.00
Eldorado, g.	Cal..	1,000,000	100,000	10	.....	10,000	July..	1899	.10
Elkton Con., g.	Colo..	3,000,000	2,500,000	1	150,000	1,129,461	June.	1901	.03
El Oro. g. s.	Mex.	5,000,000	1,000,000	5	240,000	480 000	Feb..	1901	.24
Empire State-Idaho, l.s.	Idaho	6,000,000	505,542	10	332,879	1,005,567	July..	1901	.10
Enterprise, g.	Colo..	500,000	500,000	1	.....	900,000	Sept.	1898	.05
Fanny Rawlings, g.	Colo..	1,000,000	1,000,000	1	.....	20,000	Aug.	1899	.01
Fern, g.	B. C..	200,000	200,000	1	.....	10,000	Jan..	1898	.05
Ferris-Haggarty. c.	Wyo.	1,000,000	1,000,000	1	.....	5,000	Mar..	1899	.00½
Florence, s.	Mont.	2,500,000	400,000	5	.....	223,780	Mar..	1900	.05
Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov..	1899	.25
Frontino & Bolivia, c.	C'l'm	643,310	128,662	5	.....	1,109,066	Oct..	1899	.36
Galena, s. l. g.	Utah.	1,000,000	100,000	10	.....	71,000	Sept.	1897	.05
Gemini	Utah.	500,000	5,000	100	.....	700,000	Aug.	1900	10.00
Gold Belt, g.	Colo..	1,250,000	1,250,000	1	.....	112,500	Aug.	1900	.09
Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	210,000	810,000	July..	1901	.03
Gold Deposit, g.	Colo..	500,000	500,000	1	.....	10,000	Mar..	1900	.02
Gold & Globe, g.	Colo..	750,000	750,000	1	.....	51,625	July..	1897	.00½
Gold King, g.	Colo..	1,000,000	936,850	1	56,212	412,214	July..	1901	.03
Golden Cycle, g.	Colo..	1,000,000	200,000	5	30,000	408,500	Mar..	1901	.05
Golden Eagle, g.	Colo..	500,000	500,000	1	5,000	30,000	Apr..	1901	.01
Golden Fleece, g. s.	Colo..	600,000	600,000	1	.....	569,480	Feb..	1897	.01
Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	155,000	Feb..	1898	.15
Grand Central, g. s.	Mex..	1,500,000	250,000	5	.....	840,000	Jan..	1900	.48
Grand Central. g.	Utah.	250,000	250,000	1	.....	691,250	Nov..	1900	.10
Grass Valley Expl	Cal...	100,000	30,000	2	....	30,000	Jan..	1900	.25
Greater Gold Belt, g.	Colo..	5,000,000	3,800,000	1	.....	76,000	June.	1900	.02
Gwin, g.	Cal.	1,000,000	100,000	10	90,000	241,500	Julp..	1901	.10
Hall, c. s.	B. C..	1,625,000	267,609	5	.....	220,000	May..	1899	.24
Hecla, l. s.	Idaho	250,000	1,000,000	¼	.....	100,000	Dec..	1900	.02
Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15,000	2,235,000	Feb..	1901	.50
Helena, g.	Ore..	1,000,000	1,000,000	1	35,000	85,000	July..	1901	.00½
Hidden Treasure, g.	Cal...	360,000	36,000	10	.....	457,452	Sept..	1900	.10
Holy Terror, g.	S. D..	500,000	500,000	1	.....	172,000	Jan..	1900	.01
Homestake, g.	S. D..	21,000,000	210,000	100	735,000	10,138,750	July..	1901	.50
Horn-Silver, g. s. c.z.l.	Utah.	10,000,000	400,000	25	.....	5,279,000	June.	1900	.05
Idaho, s. l.	B. C..	500,000	500,000	1	.....	292,000	Jan..	1899	.05
Independence Con., g.	Colo..	2,500,000	2,500,000	1	181,375	281,375	Apr..	1901	.04
Ingham Con., g.	Colo..	750,000	1,359,600	½	27,192	27,192	July..	1901	.00¼
Iowa, g. s. l.	Colo..	1,666,667	1,666,667	1	50,000	186,834	July..	1901	.01
Iron Silver	Colo.	10,000,000	500,000	20	.....	2,550,000	Dec..	1900	.10
Isabella, g.	Colo..	2,250,000	2,250,000	1	22,500	742,500	Mar..	1901	.01
Jamison, g.	Cal...	3,900,000	390,000	10	.....	50,700	Apr..	1899	.10
Kennedy, g.	Cal...	10,000,000	100,000	100	10,000	1,801,000	June.	1901	.05
Klondike Bonanza, g.	Klon.	750,000	52,750	5	.....	50,000	Aug.	1899	.24
La Fortuna, g.	Ariz..	250,000	250,000	1	87,500	1,003,000	July..	1901	.05
Lake City, g.	Colo..	50,000	50,000	1	.....	3,875	May	1900	.01
Last Chance, s. l.	B. C..	500,000	500,000	1	.....	45,000	Apr..	1899	.05
Last Dollar, g.	Colo..	$1,500,000	1,500,000	$1	$60,000	$150,000	May	1901	.02
Le Roi, g.	B.C.	5,000,000	200,000	5	.....	1,305,000	Nov..	1899	1.20
Le Roi, No. 2, g.	B.C..	3,000,000	120,000	5	144,000	144,000	June.	1901	1.20
Lightner, g.	Cal...	125,000	102,255	1	17,894	28,117	May..	1901	.10
Lillie, g.	Colo..	1,250,000	250,000	5	.....	349,183	Apr..	1900	.05
Mammoth, g. s. c.	Utah	10,000,000	400,000	25	120,000	1,910,000	July..	1901	.05
Marian Con., g. s. z, l. i.	Colo..	5,000,000	500,000	10	.....	202,000	Sept..	1899	.01
Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	90,000	270,000	July..	1901	.03
May Day	Utah.	100,000	400,000	¼	18,000	18,000	July..	1901	.02½
Midget, g.	Colo..	1,000,000	1,000,000	1	.....	120,000	Dec..	1900	.15
Modoc, g. s.	Colo..	500,000	500,000	1	35,000	240,000	July..	1901	.01
Mollie Gibson, s. l.	Colo..	5,000,000	1,000,000	5	.....	450,000	Jan..	1895	.05
Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	Apr..	1899	.12
Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	560,000	2,160.000	Aug..	1901	1.00
Montreal, g.	Colo..	1,000,000	750,000	1	.....	7,500	Nov..	1898	.01
Monument, g.	Colo..	300,000	300,000	1	3,000	21,124	Feb..	1901	.01
Moon-Anchor, g.	Colo..	1,750,000	350,000	5	.....	261,000	Nov..	1898	.07½
Moose, g.	Colo..	600,000	600,000	1	.....	186,000	Feb..	1896	.01
Morning Star Drift, g.	Cal...	240,000	2,400	100	.....	854,490	Sept..	1900	3.00
Morse, g.	Colo..	1,250,000	1,250,000	1	.....	215,650	May	1899	.12
Moulton. g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct..	1895	.05
Mountain, c.	Cal..	6,250,000	250,000	25	420,000	2,793,750	Apr..	1901	1.68
Mt. Diablo, s.	Nev..	5,000,000	50,000	100	.....	260,271	Jan..	1900	.10
Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75.000	Dec..	1899	.04
Mt. Shasta, g.	Cal...	100,000	20,000	5	.....	6,000	May	1899	.30
Napa Con., q.	Cal..	700,000	100,000	7	30,000	1,130,000	July..	1901	.10
National Lead, com.	U. S..	15,000,000	149,054	100	.....	1,341,486	Mar	1900	1.00
National Lead, pf.	U. S.	15,000,000	149,040	100	521,640	11,361,920	June.	1901	1.75
New Elkhorn, g.	Colo..	437,500	87,500	5	.....	1,325,000	June.	1898	.48
New Idria, q.	Cal...	500,000	100,000	5	60,000	310,000	July..	1901	.20
New Jersey Zinc.	U. S..	10,000,000	100,000	100	400,000	3,200,000	Feb..	1901	4.00
New Leadville Home, g.	Colo..	2,000,000	2,000,000	1	75,000	175,000	July..	1901	.06⅔
N.Y.& Hon Rosario, s.g.	C. A..	1,500,000	150,000	10	105,000	1,535,000	July..	1901	.10
New Zealand Con., g.	Colo..	1,000,000	765,000	1	7,650	7,650	June.	1901	.01
North Star, s. l.	B. C..	1,500,000	1,300,000	1	78,000	198,000	June.	1901	.03
North Star, g.	Cal ..	5,000,000	250,000	10	.....	584,850	Nov..	1899	.20
Nugget, g.	Colo..	1,000,000	991,000	1	29,730	84,730	July..	1901	.01
Old Colony Zinc & Sm.	Mo...	1,100,000	69,909	10	34,954	103,230	May..	1901	.25
Omega, g.	Colo..	1,500,000	1,200,000	1	.....	18,188	June.	1900	.01½
Ontario, s. l.	Utah.	15,000,000	150,000	100	15,000	14.662.500	Aug..	1901	.10
Original Empire, g.	Cal...	5,000,000	50.000	100	.....	530,000	Oct..	1899	1.00
Orphan Belle, g.	Colo..	1,000,000	1,000,000	1	.....	197,899	Dec..	1899	.09
Osceola, c.	Mich.	2,500,000	95,900	25	287,700	3,958,100	June.	1901	3.00
Parrot, c.	Mont.	2,300,000	229,850	10	1,034,325	5,428,150	July..	1901	1.50
Payne Con., s. l.	B. C..	3,000,000	2,600,000	1	78,000	1,438,000	Jan..	1901	.03
Pennsylvania Con., g.	Cal...	5,150,000	51,500	100	.....	161,325	May..	1900	.10
Pioneer, g.	Cal...	1,000,000	200,000	5	.....	62.500	Mar..	1899	.12½
Plumas Eureka, g.	Cal ..	1,406,250	140,625	10	33,750	2,831,294	Apr..	1901	.24
Pointer, g.	Colo..	1,250,000	1 250,000	1	25,000	25,000	June.	1901	.01
Portland, g.	Colo..	3,000,000	3,000,000	1	540,000	3,840,000	July..	1901	.06
Princess, g.	Colo..	1,000,000	1,000,000	1	.....	50,000	Feb..	1897	.00½
Queen Bess, s. l.	B. C..	500,000	100,000	5	.....	25,000	July..	1899	.12½
Quicksilver, pref.	Cal...	4,300,000	43,000	100	21,500	1,888,411	May	1901	.50
Quincy, c.	Mich.	2,500,000	100,000	25	900,000	12.870,000	Aug..	1901	6.00
Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	.....	105.000	Apr..	1900	.01
Reco, s. l.	B. C..	1,000,000	1,000,000	1	.....	287,500	Jan.	1898	.10
Republic Con., g.	Wash	3,500,000	3.500,000	1	.....	382.500	Mar..	1900	.01
Reward, g.	Cal...	1,000,000	100,000	10	.....	20.000	Aug..	1899	.20
Richmond, g. s. l.	Nev..	1,350,000	54,000	25	.....	4,453,797	Dec..	1900	.24
Rocco-Homestake, g.s.	Nev..	300,000	300,000	1	31,500	40,500	July..	1901	.01½
Sacramento, g.	Utah.	5,000,000	1,000,000	5	10,000	128,000	July..	1901	.00½
St. John del Rey, g.	Br'zil	3,000,000	425,482	5	.....	13,633,991	Dec..	1900	.24
St. Joseph, l.	Mo...	3,000,000	250,000	10	75,000	3,384,500	June.	1901	.15
Santa Rita, g.	Colo..	1,000,000	1,000,000	1	.....	4,000	July..	1900	.02
Silver King, g. s. l.	Utah.	3,000,000	150,000	20	675,000	4,125,000	July..	1901	.66⅔
Silver Shield, g.	Utah.	300,000	300,000	1	3,000	4,500	Feb..	1901	.00½
Small Hopes, s.	Colo..	5,000 000	250,000	20	....	3,325,000	Feb..	1899	.10
Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	210,000	2,005.000	July..	1901	.03
Southern Boy, g.	Colo..	1,250,000	875,000	1	.....	17,500	May	1900	.02
South Swansea, s. l.	Utah.	300,000	275,000	1	7,500	172,500	Mar..	1901	.05
South Winnie, g. s.	Colo..	250,000	250,000	1	7,500	7,500	June.	1901	.03
Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10.000	Nov..	1899	.00½
Standard Con., g. s.	Cal...	2,000,000	178,394	10	35,678	3,999,780	May	1901	.10
Standard, s. l.	Idaho	500,000	500,000	1	150,000	2,340,000	July..	1901	.05
Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	547,503	3,312,853	July..	1901	.24
St Eugene Con., s.l.	B. C..	3,500,000	3,500,000	1	210,000	210,000	Apr..	1901	.03
Swansea, s. l.	Utah.	500,000	100,000	5	35,000	341,500	July..	1901	.05
Tamarack, c.	Mich.	1,500,000	60,000	25	600,000	7,890,000	June.	1901	10.00
Tomboy, g.	Colo..	1,500,000	300,000	5	72,000	1,028,000	June.	1901	.24
Town Topics, g. c.	Colo..	1,000,000	1,000,000	1	10,000	10,000	July..	1901	.00½
Union, g.	Colo..	1,250,000	1,250,000	1	.....	395,244	Sept..	1900	.25
Union, z. l.	Kas..	500,000	500,000	1	35,000	70,000	July..	1901	.01
United, z. l., pref.	Mo...	6,000,000	14,998	25	22,497	52,760	July..	1901	.50
United Verde, c.	Ariz..	3,000,000	300,000	10	.....	7,861,180	Dec..	1900	1.50
Utah, g.	Utah.	1,000,000	100,000	10	6,000	187,000	May	1901	.02
Utah Con., c.	Utah.	1,500,000	300,000	5	375,000	375,000	Apr..	1901	1.22
Vindicator Con., g.	Colo..	1,500,000	1,100,000	1	115,000	609,000	July..	1901	.05
War Eagle Con., g. s. c.	B.C..	2,000,000	1,750,000	1	.....	545,250	Feb..	1900	.01½
Wolverine, c.	Mich.	1,500,000	60,000	25	.....	510,000	Oct..	1900	2.00
Yellow Aster, g.	Cal...	1,000,000	100,000	10	.....	459,410	Dec..	1900	.10
Ymir, g.	B. C..	1,000,000	200,000	5	96,000	144,000	May	1901	.24
Zoe, g.	Colo..	1,500,000	1,500,000	1	.....	7,500	Dec..	1900	.00½

This table is corrected up to July 26th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.08
Grains	"	.10
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Crushed Steel, f. o. b. Pittsburg	"	.05½
Emery, Turkish flour, in kegs	"	.03¼
Grains, in kegs	"	.05@.05½
Naxos flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Chester flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Peekskill, f.o.b. Easton, Pa., flour, in kegs	"	.01¼
Grains, in kegs	"	.02½
Crude, ex-ship, N. Y.:		
Abbott (Turkey)	lg. ton	26.50@30.00
Afrodissia (Turkey)	"	23.00@24.00
Kuluk (Turkey)	"	22.00@24.00
Naxos (Greek) h. gr.	"	26.00
Pumice Stone, Am. powd.	lb.	.01½@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg	"	.07
Acids—		
Benzoic, English	oz.	.11
German	lb.	.36
Boracic, crystals	"	.10½@.11
Powdered	"	.11@.11½
Carbolic, crude, 60%	gal.	.27
Cryst, 37% drums	lb.	.22
Liquid, 95%	gal.	.45
Carbonic, liquid gas	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Hydrofluoric, 30%	"	.03
48%	"	.05
Best	"	.25
Sulphurous, liquid anhy.	"	.08
Tartaric, cryst.	"	.28¼
Powder	"	.29
Alcohol—Grain	gal.	2.49
Refined wood, 95@97%	"	.60@.65
Purified	"	1.20@1.50
Alum—		
Lump	100 lbs.	1.75
Ground	"	1.80
Powdered	"	3.00
Chrome, com'l	"	2.75@3 00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	100 lbs.	2.60
Sulphate, pure	"	1.50@2.00
Com'l	"	1.15@1.25
Ammonia—		
Aqua, 16°	lb.	.03
18°	"	.03¼
20°	"	.03¾
26°	"	.05½
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08½
Powdered	"	.09@.09¼
Muriate, gran.	"	.06@.06½
Lump	"	.09
Nitrate, white, pure (99%)	"	.12
Phosphate, com'l	"	.10
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08¼
Oxide, com'l white, 95%	"	.09¼
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	16
Arsenic—White	"	.03½@.03⅝
Red	"	.07@.07¼
Asphaltum—		
Ventura, Cal.	sh. ton	32.00
Cuban	lb.	.01½@.03½
Egyptian, crude	"	.05½@.06
Trinidad, refined	sh. ton	35.00
San Valentino (Italian)	lg. ton	16.00
Seyssel (French) mastic	sh.ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	100 lbs.	1.67½@1.76
Chem. pure cryst	lb.	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.02
Barytes—		
Am. Cr., No. 1	sh ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
German, gray	"	14.50
Snow white	"	17.00
Bauxite—Ga. or Ala. mines:		
First grade	lg. ton.	5.50
Second grade	"	4.75
Bismuth—Subnitrate	lb	1.70
Subcarbonate	"	1.90
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	"	.02¼@.02½
Borax	"	.07¼@.07½
Calcined	"	.25
Bromine	"	.40

	Cust. Meas.	Price.
Cadmium—Metallic	lb.	$1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray	"	1.55
brown	"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N.Y, or Jersey City, N. J.	sh. ton	75.00
Carbonate, ppt.	lb.	.05
Chloride, com'l	100 lbs.	.75
Best	"	.80@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Foreign	"	1.65@2.25
"Rosendale," 300 lbs.	"	.95
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	lb.	.12½
White	"	.14
Chalk—Lump, bulk	sh. ton	2.50
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.15
Chrome Ore—		
(50% ch.) ex-ship, N. Y.	lg. ton	24.00
Sand, f.o.b. Baltimore	"	33.00
Bricks, f.o.b., Pittsburg.	M	175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Fire Clay, ordinary	sh. ton	4.25
Best	"	6.00
Slip Clay	"	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.75
Nitrate	"	1.50
Oxide—Black	"	2.26@2.30
Gray	"	2.28@2.40
Smalt, blue ordinary	"	.10
Best	"	.20
Copperas	100 lbs.	.30@.35
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.25
Oxide, com'l	"	.19
Cream of Tartar	"	.19¼@.19¾
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.65
Blasting powder, B	"	1.40
"Rackarock," A	lb.	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.16½
(60% nitro-glycerine)	"	.18
(75% nitro-glycerine)	"	.21
Glycerine for nitro (32 2-10° Be.)	"	.13@.13½
Feldspar—Ground	sh. ton	8.00@9.00
Fluorspar—		
Am. lump, 1st grade	"	14.40
2d grade	"	13.90
Gravel & crushed, 1st g	"	13.40
2d grade	"	12.40
Ground, 1st grade	"	17.90
2d grade	"	16.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump	sh. ton	8.00
Pulverized	"	30.00
German, com. pulv.	lb.	.01¼@.01½
Best pulverized	"	.01½@.02
Ceylon, common pulv.	"	.02¾@.03½
Best Pulverized	"	.04@.08
Italian, pulv	"	.01¼
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground, American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Iron—Muriate	lb.	.05
Nitrate, com'l	"	.01¼
True	"	.04
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
gran.	"	.8½
Lime—Com., ab. 250 lbs	bbl.	.70
Finishing	"	.80
Magnesite—Greece.		
Crude (95%)	lg. ton	6.50@7.00
Calcined	sh.ton	14.00@15.00
Bricks	M.	170.00
Am. Bricks, f o.b. Pittsburg	"	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.04½
Blocks	"	.06@.07
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Sulphate	100 lbs.	.75@.95
Manganese—Powdered.		
75@75% binoxide	lb.	.01¼@.01½

	Cust. Meas.	Price
Manganese—		
Crude, pow'd		
75@85% binoxide	lb.	$0.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.23@.24
Domestic	"	.30
Marble—Flour	sh. ton	6.00@7.00
Mercury—Bichloride	lb.	.77
Mica—N. Y. gr'nd, coarse	"	.03@.04
Fine	"	.04@.05
Sheets, N. C., 2x4 in.	"	.30
3x3 in.	"	.80
3x4 in.	"	1.50
4x4 in.	"	2.00
6x6 in.	"	3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.	25.00
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.:		
20@30 cold test	gal.	.09¾@.10¼
15, cold test	"	.10¾@.11¼
Zero	"	.11¾@.12¾
Summer	"	.09¼@.09¾
Cylinder, dark steam ref	"	.08¾@.10¼
Dark filtered	"	.11¼@.15¾
Light filtered	"	.14¾@.17¾
Extra cold test	"	.21¾@.26¼
Gasoline, 86° @ 90°	"	.14@.18
Naphtha, crude 68@72°	bbl.	9.05
"Stove"	gal.	.12
Linseed, domestic raw	"	.80@.82
Boiled	"	.84
Calcutta, raw	"	.85
Ozokerite	lb.	.11½
Paints and Colors—		
Chrome green, common	"	.05
Pure	"	.16
Yellow, common	"	.10¼
Best	"	.25
Lampblack, com'l	"	.04½
Refined	"	.07
Litharge, Am. powd.	"	.05¼
English flake	"	.08
Glassmakers	"	.07½
Metallic, brown	sh. ton	19.00
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02
Orange mineral, Am.	"	.07¾@.08
Foreign, as to make	"	.08¼@.11¼
Paris green, pure, bulk	"	.12
Red lead, American	"	.05½
Foreign	"	.07¼@.08¼
Shellac, "D. C."	"	.26
Native	"	.14½
Turpentine, spirits	gal.	.35½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	10@.14
Quicksilver, bulk	"	.70
Foreign	"	.80@.85
White lead, Am., dry	"	.04¾@.05
American, in oil	"	.05¾
Foreign, in oil	"	.07¾@.09⅜
Whiting, common	100 lbs.	.40
Gilders	"	.45½
Zinc white, Am., ex. dry	lb.	.04⅜@.04⅞
American, red seal	"	.06½
Green seal	"	.07
Foreign, red seal, dry	"	.05½@.06⅝
Green seal, dry	"	.07¼@.09⅞
Potash—		
Caustic, ordinary	"	.05¼@.05½
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst.	"	.08¼
Powdered or gran.	"	.14
Bichromate, Am.	"	.08¼
Scotch	"	.08½@.09
Carbonate, hydrated	"	.04¼
Calcined	"	.04
Chromate	"	.35
Cyanide (98@99%)	"	.24@.25
Iodide, bulk	"	2.05
Kainit	lg. ton	9.05
Manure salt, 20%	100 lbs	.66
Double Manure salt, 48@53%	"	1.12
Muriate, 80@85%	"	1.83
95%	"	1.86
Permanganate, pure cr.	lb.	.11@.11¼
Prussiate, yellow	"	.13¼@.13½
Red	"	.37
Silicate	"	.06
Sulphate, 90%	"	2.11
96%	"	2.13
Sulphide, com'l	"	.10
Sylvinit	unit	.36
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.45
Best	"	3.70
Salt—N Y com fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpeter—Crude	100 lbs.	3.37½
Refined	"	4.25
Silica—Best foreign	lg. ton	10 00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Silicon—Carbide	lb.	.05
Silver—Chloride	oz.	0.65
Nitrate	"	.40
Oxide	"	.85@1.10

	Cust. Meas.	Price.
Slate—Ground, black	sh. ton	$7.50@8.75
Ground, red and olive.	"	20.00
Sodium—Acetate, com'l.	lb.	.04¼
Bichromate	"	.06¼
Chlorate, com'l	"	.09¼@.09¾
Hyposulphite, Am.	100 lbs.	1.75@1.80
German	"	1.95@2.00
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.11
Silicate, conc	"	.05
com'l	"	.01
Sulphate, com'l	100 lbs.	.70
Gran., puri'd	lb.	.03
Sulphide	"	.01¼
Sulphite crystals	"	.02½
Tungstate, com'l	"	.35
Strontium—Nitrate	"	.07¾@.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.80
Flowers, sublimed	"	2.05
Talc—N. C, 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French, best	100 lbs.	1.25
Italian, best	"	1.62½
Tar—Regular	bbl.	2.25
Oil barrels	"	4.25
Tin—Bichloride, 50%	lb.	.09½@.10
Crystals	"	.22½@23
Muriate, 36°	"	.09
52°	"	.15
Oxide, white, ch. pure	"	.43
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.07@.07½
Carbonate	"	.15
Chloride	"	.05
Dust	"	.05½@.05¾
Sulphate	"	.02@.02⅛

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium—Sticks	kg.	1.55
Sheets	"	2.83
Granulated	"	1.79
Powder	"	1.19@1.79
Calcium—Elect	grm.	4.28
Tungstate (Scheelite), N. Y	lb.	.60
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	11.00
Chromium—Fused, Elect.	kg.	5.95
Pure powder, 95%	"	1.55
Chem. pure cryst	grm.	.20
Cobalt—(98@99%)	kg.	7.26@9.52
Pure	"	30.94
Didymium—Powd.	grm.	3.81
Fused, Elect.	"	5.47
Nitrate (N. Y.)	lb.	35.00
Erbium	grm.	3.09
Nitrate (N. Y.)	lb.	40.00
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Balls, fused	"	35.70
Nitrate (N. Y.)	lb.	20.00
Indium	grm.	3.57
Iridium—Fused	"	1.07
Powder	"	.95
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	lb.	30.00
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—Ingot	kg.	6.43
Powdered	"	5.47@7.14
Ribbon	"	9.99
Sheet	"	9.04
Wire	"	9.52
Manganese—Fu'd com'l	"	1.31@1.43
Fused, pure	"	3.81
Molybdenum—Fused pr	grm.	.07
Chem. pure	kg.	17.85
Powder, 95%	"	2.62
Niobium	grm.	3.81
Osmium	"	.95
Palladium—Wire	"	.86
Sponge	"	62
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.38
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.49
Selenium—Com'l powder	"	26 18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Fused, pure	"	14.28
Chem. pure crystals	"	47.60
Amorphous	"	23.80
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	107.10
Chem. pure powder	"	83.30
Thallium	"	26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.	5.00
Titanium—Pure	kg.	19.04
Chem. pure	"	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Vanadium	grm.	1.19
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	.95
Chem. pure powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	lb.	40.00
Zirconium—Com'l	kg.	95.20
Nitrate (N. Y.)	lb.	8.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.